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DETROIT

Air Conditioning & REFRIGERATION NEWS

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Frozen Foods on Move To Become Big League Stuff

So Says Clarence Francis; 900 Birdseye Retailers Enrolled Since Jan. 1

NEW YORK CITY—Continued expansion of quick-frozen foods production and distribution during the current year and a possible meteoric growth in the not-too-distant future was forecast by Clarence Francis, president of General Foods Corp., at a luncheon of more than 200 food editors and nutritionists, sponsored here March 13 by the Frosted Foods sales division of General Foods Corp. at the Waldorf-Astoria hotel.

"Frosted foods require no supplies from abroad," Mr. Francis declared. "No imports of foods or container material are required. Therefore, they are no drain on ocean shipping space. They use a minimum of rail and trucking space, because waste is eliminated at the source. Likewise, they require a minimum of storage space, since only edible parts are stored. They are an aid to farmers because they encourage production of the best crops—the kind that bring in better prices to agriculturists.

"By eliminating waste at the source of supply and increasing efficiency of distribution, our quick freezing not only benefits American agriculture but it increases the total volume of food supplies available in this country.

"Quick freezing today is becoming a big league game. Birds Eye Frosted Foods now are being retailed in every state in this country. They were being distributed, March 1, 1941, through 10,500 retail outlets against only 9,595 at the end of 1940, 5,788 at the end of 1939, and 4,059 at the end of 1938.

"Large volume production and distribution is essential in frosted foods. Quick freezing, like the food industry generally, is highly competitive. We need large volume, progressive merchandising, intensive research, and efficient management and personnel to meet consumers' demands."

After reviewing the years of experimentation which provided the basis for frosted foods, Mr. Francis traced the industry's growth since the retail introduction of frosted

(Concluded on Page 4, Column 4)

Dallas Refrigerator Sales Up 76% In Jan.

DALLAS, Tex.—Paced by a 76% increase—1,082 units against 613—in electric refrigerator sales, January sales of all major appliances by dealers in the territory of Dallas Power & Light Co. reflected the increasing buying power of the general public by registering gains all along the line over sales for the corresponding month of 1940.

Other increases registered this year over January, 1940 figures were: washers, 320 against 153; ironers, 24 against 7; vacuum cleaners, 647 compared with 413; radios, 2,118 against 1,401; attic fans, 26 against 7.

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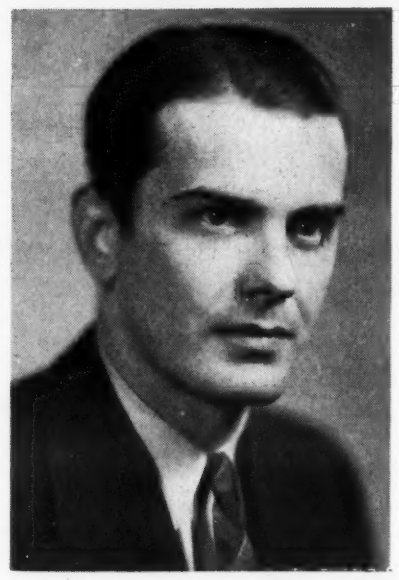
Dallas Commercial Sales May Set Feb. Mark

DALLAS, Tex.—Survey of sales reported by the leading commercial refrigerator distributors of Dallas for the month of February indicated that records for that month will be considerably exceeded. Sales generally were of small units to small operators.

Allen, Riggin Take New Posts With Mueller



GEORGE ALLEN
Sales manager of the refrigeration division.

FRED RIGGIN, JR.
Assistant to president.

* * *

Allen Heads Mueller Refrigeration Sales

PORT HURON, Mich. — George Allen is now directing sales of the refrigeration division of Mueller Brass Co., succeeding Fred Riggin, Jr., who has been made assistant to the president.

Mr. Allen had been sales promotion manager of the refrigeration division since July, 1937.

He has spent practically all of his business career in the refrigeration industry. A graduate of the University of Michigan, he was with Kelvinator from 1932 until 1935, first in the inspection department, and later in household refrigeration sales. From 1935 until 1937 he was assistant domestic sales manager of Universal Cooler Corp., which position he left to join Mueller. Like many other executives in the industry, Mr. Allen is an ardent hunter and fisherman.

Rex Cole Display Room Now on 42nd Street

NEW YORK CITY—Rex Cole, Inc. is back in Manhattan.

The long-time General Electric distributor for the New York metropolitan area has leased for immediate occupancy 18,000 sq. ft. in the Bartholomew building, 203 E. 42nd St. The space comprises a showroom with a 58-foot frontage on the westerly side of the building with mezzanine. It was formerly occupied by the National Cash Register Co. In addition, 7,500 sq. ft. has been taken on the fourth floor for office use.

(Concluded on Page 4, Column 3)

S. Calif. Dealers Face Anti-Trust Law Indictment

Say Financing Was Club In 'Restraint of Trade' By Appliance Group

LOS ANGELES — Marking the first attack upon "horizontal price maintenance among competitors in an industry" since enactment of the Miller-Tydings Act, the Federal grand jury here on March 14 returned an indictment charging two southern California public utilities, nine retail department stores, 10 gas range manufacturers, 23 individuals, and the Retail Furniture Association of Southern California with violation of the Sherman anti-trust laws.

It is charged in the indictment that the defendants conspired among themselves, through committees of the large retailers and manufacturers, to fix the price to domestic users of gas ranges. The indictment further charged that this conspiracy

(Concluded on Page 16, Column 3)

Tin Plentiful, No Need of Price Rise

WASHINGTON, D. C. — Buying practices which advance the price of tin were denounced by W. A. Harriman, chief of the materials branch of OPM's division of production. Apparently as a result of unsettled conditions in the Far East, heavy buying in the New York market has recently increased the price of tin for early delivery from around 50 cents a pound to 54 cents.

Actual supplies of tin already stored in this country and already afloat beyond any danger zone are sufficient to meet requirements at the present rate of consumption for at least 15 months without resorting to conservation or substitution, Mr. Harriman explained.

Philco To Start 1941 Room Cooler Drive

PHILADELPHIA—Philco will announce 1941 plans for its line of window and floor type room coolers at a series of sectional distributors' meetings to be held the latter part of March. Harry Boyd Brown, manager of the company's air conditioning division, will give complete details, including additions to the line, new design, advertising appropriations, and promotion plans.

Carrier 1940 Net Profit Is $526,628; Sales Increase 14%

SYRACUSE, N. Y.—A net profit in 1940 of $526,628, the largest income in any year since the formation of Carrier Corp., was announced last week by J. I. Lyle, president. This compares with a profit of $18,788 in 1939.

Income before Federal taxes equalled $1.95 per share and afterwards $1.34 per share.

Orders booked during the year were approximately 14% greater than in 1939 and completed sales for the year were 12% above those for 1939, the official noted.

The largest backlog of unfilled

(Concluded on Page 4, Column 5)

Wolverine Tube's Profit $382,724

DETROIT—Net earnings of Wolverine Tube Co. for the year ended Dec. 31, 1940 were $382,724, equivalent to approximately 90 cents per common share, as compared with net earnings of $411,531, equal to 97 cents per common share, for the preceding year, according to the company's annual report for the year 1940.

Net sales in 1940 were the highest for any year in the history of the company, at $6,162,292, and represented an increase of more than 30% over 1939. Due largely to higher

(Concluded on Page 16, Column 5)

What Will Ice Trays Be Made of Next?

Up to the moment of going to press, no household refrigerator manufacturer had announced what substitute material would be used for ice trays (since defense demands have caused the rationing of aluminum trays).

Currently most manufacturers are shipping refrigerators without any trays whatsoever, expecting dealers to take trays from refrigerators in stock and put one or two in the empty evaporators of new arrivals.

It is being said (via the grapevine) that one manufacturer has placed orders for new dies to stamp out copper ice trays. Another is reported going to rubber trays. A third manufacturer is believed to have a plastic tray all set.

At least one supplier of drawn sheet plastics is now ready to turn out trays made of this material—which he declares to be less breakable than moulded plastics.

Norge Prices Up $5; Sales Up on Costlier Models

March Sales Increase To Overshadow 40% Gain For First 2 Months

DETROIT — Price advances approximating $5 per model throughout the Norge Rollator refrigerator line have been announced by Paul H. Puffer, general sales manager, Norge division, Borg-Warner Corp.

Coincident with the announcement of price increases, Norge's sales manager revealed that the dominant factor in the recently announced Norge sales gain of 40% in January and February had been a spurt in the sale of the higher-priced models in the line.

"The price increases are nominal and it is not anticipated that sales figures for coming months will reflect even the slightest trace of the advanced selling price," Mr. Puffer stated. "Increasing costs of raw materials have dictated such upward revisions throughout the industry.

"Dealer and distributor sales reports from all over the United States are indicating doubled, and in many sections, tripled sales over the same period a year ago. Factory production facilities are running on an 'all out' basis to fill unprecedented orders from the field. March production will far exceed the 40% gain achieved in the first two months of this year, as dealer and distributor stocks are being lowered daily.

"Particularly significant is the fact that the higher priced models in the line have accounted, almost exclusively, for the upswing."

Crosley Sales Far Over '40 Figures

CINCINNATI—Crosley Corp. has already received distributor orders for 1941 for 52.7% as many refrigerators as were shipped during the entire record year of 1940, reports R. I. Petrie, vice president and general manager. Reports of sales increases as high as 400% in January over the same month of 1940 have been received from distributors in various parts of the country, he said.

Refrigerator shipments during February were more than 125% higher than those of the same month of last year, Mr. Petrie declared, exceeding the 107% increase reported for January.

Shipments of radios were up 118% in February over the same month of last year, he said, compared with an 86% gain in January.

Even Drapery Clerks and Janitors Sell Appliances For St. Louis Dept. Store

ST. LOUIS—Increase of 30% in the number of appliances sold in January and February over last year has convinced Henry Free, buyer of domestic appliances for Scruggs-Vandervoort-Barney department store here, that his idea to make every emplove of the store a salesman is a good one.

Because only two salesmen were regularly employed in the appliance department, Mr. Free did not believe appliances were receiving as much selling effort as was required. So, in January he began his plan to have each of the store's 500 employes—from drapery salesperson to janitor—sell appliances.

When new models in each appliance line were placed on the showroom floor in January, two special "Employe Previews" were held for the store's personnel. After these showings, Mr. Free held a sales meeting for the entire store, explaining selling points of each unit, and offering a 2% commission to each employe for every sale developed.

Under the plan, employes turn their prospects in to Mr. Free directly, not to the regular appliance salesmen, in order to avoid conflicts on commissions. They are notified if the sale is made. Since establishment of the plan, leads have been filed by more than 200 employes, and more than 50 sales made are directly traceable to employes who otherwise would have no contact with the major appliance department.

Jan. Appliance Sales Up 17%, Census Figures Show

WASHINGTON, D. C. — Dollar volume of retail sales by 270 electrical appliance dealers reporting to the Bureau of the Census, Department of Commerce, totaled $1,241,535 during January of this year, an increase of 17% over those for the same month of 1940. The month's sales, however, were 39% below those of December of last year.

Inventories of 218 appliance dealers reporting to the census bureau were set at $2,463,036 as of Dec. 31, 1940, an increase of some 6% over the $2,316,300 shown by the same firms on Dec. 31, 1939. Annual sales by these dealers totaled $19,503,355 during 1940, an increase of 12% over sales for 1939, which amounted to $17,355,290.

Sale of All Nema Commercial Units Near 20,000 Total In January

The following report of commercial refrigerating equipment sales for January, 1941 was made to the Commercial Refrigeration Section of the National Electrical Manufacturers Association (Nema) by the following 15 companies: Baker Ice Machine Co., Inc., Brunner Mfg. Co., Carrier Corp., Crosley Corp., Frigidaire Div. General Motors Corp., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Merchant & Evans Co., Norge Div. Borg-Warner Corp., Servel, Inc., Universal Cooler Corp., Vilter Mfg. Co., Westinghouse Electric & Mfg. Co., and York Ice Machinery Corp.

SALES FOR JANUARY, 1941	Domestic Quantity	Domestic Value	Canadian Quantity	Canadian Value	Other Foreign Quantity	Other Foreign Value	Total World Quantity	Total World Value
1. Bottle Water Coolers—Complete	125	$ 7,670	....	....	12	$ 876	137	$ 8,546
2. Pressure Water Coolers—Complete	1,621	168,032	17	1,493	232	24,379	1,870	193,904
3. Water Coolers—Low Side Only	43	4,153	....	....	2	826	45	4,979
4. Ice Cream Cabinets—Complete	2,579	369,645	151	28,599	25	3,321	2,755	401,565
5. Ice Cream Holding Cabinets Only (Remote)	65	9,665	....	....	2	327	67	9,992
6. Bottle Beverage Coolers—Complete	6,152	537,666	1,267	129,788	51	6,949	7,470	674,403
7. Beverage Coolers (No High Sides)	26	2,342	....	....	....	....	26	2,342
8. Milk Coolers—Complete	1	98	....	....	....	....	1	98
9. Milk Cooling Cabinets (No High Sides)	60	2,933	....	....	....	....	60	2,933
10. Commercial Evaporators—Not Reported Above (Including Cold Diffusers, Brine, and Other Spray Evaporator, Etc.)	1,401	88,403	353	9,657	259	12,881	2,013	110,941
11. Condensing Units Less Than ⅓ Hp	2,230	85,562	81	3,667	152	7,071	2,463	96,300
12. Condensing Units—⅓ Hp	2,082	112,920	57	3,670	91	5,809	2,230	122,399
13. Condensing Units—½ Hp	1,406	106,353	56	4,690	88	7,717	1,550	118,760
14. Condensing Units—¾ Hp	659	70,816	31	3,371	66	7,353	756	81,540
15. Condensing Units—1 Hp	366	47,037	12	1,644	55	7,618	433	56,299
16. Condensing Units—1½ Hp	189	32,045	4	690	36	6,078	229	38,813
17. Condensing Units—2 Hp	115	21,903	2	412	23	4,373	140	26,688
18. Condensing Units—3 Hp	58	16,090	....	....	35	8,619	93	24,709
19. Condensing Units—5 Hp	42	16,241	....	....	1	364	43	16,605
20. Condensing Units—7½ Hp	38	37,312	....	....	....	....	38	37,312
21. Condensing Units—10 Hp	19	11,754	....	....	....	....	19	11,754
22. Condensing Units—15 Hp	13	11,270	....	....	....	....	13	11,270
23. Condensing Units—20 Hp	23	27,458	....	....	2	1,666	25	29,124
24. Condensing Units—25 Hp	....	....	....	....	....	....	....	....
25. Condensing Units—30 Hp	11	18,643	....	....	....	....	11	18,643
26. Condensing Units—40 Hp	2	3,616	....	....	....	....	2	3,616
27. Condensing Units—50 Hp	3	8,493	....	....	....	....	3	8,493
28. Total—All Condensing Units (11 to 27)	7,256	627,513	243	18,144	549	56,668	8,048	702,325
29a. Condensers—Sold Separately Shell & Coil or Shell & Tube	1	250	....	....	....	....	1	250
29b. Evaporative Type	3	1,068	....	....	....	....	3	1,068
30. Total—All Commercial Refrigeration	....	$1,819,438	....	$187,681	....	$106,227	....	$2,113,346

Small Systems In Fore of N. Y. Installations

NEW YORK CITY — Thirty-four air conditioning installations were made in the greater New York area during January of this year, according to reports by dealers to Consolidated Edison Co. Of these jobs, 16 were less than 10 hp.; five were between 10 hp. and 20 hp.; and eight were in excess of 20 hp.

Included in the installations were 20 self-contained units.

A classified list of January installations follows:

Residential	2
Funeral Home	1
Hospital Laboratory	1
Office Building	1
Offices, Misc.	6
Restaurants	9
Showrooms	2
Stores, Retail	7
Theater	1
Misc. Commercial	1
Laboratory	1
Candy Mfg.	1
Misc. Industrial	1
Total	**34**

Fruit Storages In N. Y. Are Ruled 'Factories'

ALBANY, N. Y.—The New York State Board of Standards and Appeals has ruled by a two to one vote that a plant maintained for the grading, packing, and storage of fruits is a "factory" within the meaning of the state labor law and is subject to the safety codes promulgated under the law.

The board's action confirms a labor department interpretation of the law which never before had been challenged. The ruling arose from the cases of a number of cold storage plants in the state. In each of these cases, administrative orders had been issued by the division of inspection of the state labor department requiring compliance with various provisions of the labor law and the industrial code relating to factories. In the main, these orders required certain measures be taken to afford protection to the lives, health, and safety of employes.

Duplicate $1,000 Prize Given By Warren Co.

ATLANTA—Introduction of new models and presentation of cash prizes to winners in the company's "Sales Circus" contest featured the annual convention of The Warren Co., Inc., manufacturer of commercial refrigeration equipment. Visitors also were taken on a tour of the Warren plant.

New models were presented by R. D. Jacobs, Russell Odor, Dell Scott, and Harold Webb. Prizes were presented by J. D. Harris, secretary-treasurer and sales manager of the company.

First prize of $1,000 was won by Lovic C. Warren, Jr., but W. J. Cisa was so close on Mr. Warren's heels at the contest's end that the company awarded a duplicate first prize.

Other winners of major prizes were: Grover C. Richey, $750; George Combs, $500; D. F. Williams, $400; George A. LeRuez, $300; J. B. Hecht, $250; and Fred Kern, $200.

Winners of $100 awards were: J. M. Deeds, Walter Young, McGahee & Weaver, D. I. Kidd, W. H. Riley, G. L. Patman, L. T. Ragan, and L. F. Sollee. Winners of $50 checks were: Carl R. Allen, C. W. Yarbrough, N. Radogna, Al Alpert, W. G. Smith, W. S. Howard, R. J. Cohoon, J. H. Everet, and E. B. McLeran, Jr. Winners of $25 prizes were: Aaron Torch, Gus Petillo, Morris Blumberg, J. R. Tuler, Maske & Kent, W. A. Phillips, Benj. Fisch, and Titus Olsen.

Lawrence D. Galewsky presented prizes to the following members of the company's Texas and Louisiana organization: R. Wright, $350; Harry Galewsky, $200; C. B. Pardonner, $100; V. J. Raaf, $75; Joseph Baggese, $50; W. H. Perkins, R. J. Reinhardt, Jr., and J. A. Marshall, jeweled watches.

Georgia Power '41 Quota On Commercial $203,500

ATLANTA—Quotas of $203,500 in commercial refrigeration and $50,000 in electric cooking and heating equipment have been established for the commercial sales department of Georgia Power Co. during 1941. Air conditioning quota for the year has been set at $5,000, commercial water heater quota at $15,000, and ventilating equipment quota at $20,000.

High refrigeration quota, $49,440, has been assigned to the Atlanta division, with Macon division next with $41,612, and Columbus third high with $35,198.

Steele Takes Hotpoint

HARRISONBURG, Va. — Clarence Steele has been appointed Hotpoint appliance dealer here.

Norman Cowles Elected President of New York Ice Cream Supply Club

NEW YORK CITY—Norman J. Cowles, metropolitan manager of Brunner Mfg. Co., was recently elected president of the Ice Cream Supply Men's Club of Metropolitan New York.

A newcomer in the club, having been a member only a year, Mr. Cowles has made a record for himself in handling committee work, his big job being chairman of the committee responsible for the club's outing last summer.

In addition to the refrigeration line, Mr. Cowles also represents Brunner's air compressor line for the automotive and industrial trade. He is the only man to have held the office of president of Automotive Boosters Club 13 of New York for two terms.

He is an active member and treasurer of the crippled children's Christmas fund, an activity of the Boosters for under-privileged and crippled children from the Joint Disease hospital here.

Kellogg, Klahn Win Top Prizes In Contest By Jas. P. Marsh Corp.

CHICAGO—Winners of the contest conducted during the recent All-Industry Exhibition to obtain a name and suggested uses for the new Marsh charging and testing outfit have been announced by A. D. Rose, sales manager of Jas. P. Marsh Corp.

First prize for suggesting the name "Service-Master" and the best uses went to Rial Kellogg, Lansing, Mich. Second prize was awarded to George R. Klahn, Minneapolis.

Five additional awards went to: William E. Anglin, Lansing, Mich.; Edward J. Dettling, Chicago; Irving Silver, Nashville, Tenn.; G. A. Post, Indianapolis; and C. W. Kamm, Toledo.

Dealer Employe Wins Wages & Hours Suit

DALLAS, Tex.—Damages totaling $2,696.62 were awarded to J. L. McBride, former employe of Super-Cold Southwest Co. here, in a suit contending the company's disregard of protective provisions in the Wages and Hours act.

The decision of Judge W. A. Atwell of the United States District court follows closely other decisions under the act, which have held that the plaintiff is entitled to recovery of double the amount of contended back wages, as well as legal fees.

Mr. McBride claimed back pay owing of $1,223.31, liquidated damages in equal amount, and attorney's fees of $250.

The damages award was the largest individual recovery on record under the act here.

Commercial Replacement Hardware Cataloged

BROOKLYN — Complete line of replacement locks and hinges for commercial refrigerators is described and illustrated in the new R-44 replacement hardware catalog issued by Kason Hardware Corp. This field has recently been gaining prominence as an extra source of business for refrigeration service men.

Several additions also have been made to Kason's line of hardware for household refrigerators. All products shown in the catalog are available from refrigeration supply jobbers.

Tuthill Freezer Sales 2-To-1 over 1940

CHICAGO—Sales of Tuthill counter freezers are running better than two to one over last year, reports H. T. Kessler, vice president in charge of the refrigeration products division of Tuthill Pump Co. Indications point to a new all-time high for Tuthill freezer volume in 1941, he declares.

EASY FLARING

You get it in WOLVERINE TUBING

—Buy From Your Jobber—

WOLVERINE TUBE CO. DETROIT

SQUARE D IN REFRIGERATION

Flexible!

CLASS 9110 REGULATORS

From the basic unit, these features are available:

Manual Cut-in • Manual Cut-out • Limited Range • High Side Manual Reset • Universal Bulb • Fixed Differential

DO IT ALL WITH SQUARE D—SWITCH • PROTECT • REGULATE

Jobber Inquiries Invited

SQUARE D COMPANY

REGULATOR DIVISION

DETROIT • • MICHIGAN

Write for Bulletin

Another Message

To you men who read the News

'over somebody else's shoulder'

Put in your request for a company group subscription. From now until the end of April, your company may receive a free binder designed and made especially for keeping file copies of Air Conditioning & Refrigeration News neat and always available for ready reference. Made of stiff board covers, attractively bound in good quality of black imitation leather, this binder normally sells for $3.75. Your company may have one free with a group subscription order.

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5 to 9 subscriptions $3.75 per year
10 to 19 subscriptions $3.50 per year
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Coming-- A SPECTACULAR

PHILCO Refrigerator Promotion

. . . the Greatest the Industry Has Ever Seen!

From coast to coast, it's *unanimous* . . . Philco for 1941 is the sensation of the refrigerator industry in value and sales appeal. More features for the money . . . more new, exclusive, saleable ideas . . . the greatest dollar for dollar values in refrigeration!

And now . . . a smashing, sweeping Philco promotion is ready to burst like a bombshell upon the refrigerator market! Nothing has been spared to make this the greatest promotion the industry has ever seen. A powerful, retail selling promotion . . . giving you everything you need to draw in the customers . . . to sell them . . . and to sell them UP!

And back of this amazing promotion will be a great Philco advertising campaign, covering the country from coast to coast with the sensational news!

Your distributor will get full information in a few days and you'll be hearing the complete story in time to greet the opening of the active refrigerator season with a spectacular retail selling event. So clear the decks for action . . . and get ready for the biggest profit-building promotion ever offered to the refrigerator dealers of America!

THE GREATEST REFRIGERATOR EVER BUILT . . .
PHILCO
Advanced Design
MODEL MAH-7

PHILCO ALL YEAR 'ROUND

. . . the Most Valuable Franchise in the Appliance Field!

a Masterpiece for Economy

MASTERCRAFT ADJUSTABLE PAD AND CARRYING HARNESS

Efficient, sturdy and economical. Provides safer handling and thorough protection of refrigerators. Pad and harness are separate units and both adjustable to practically all styles and sizes of cabinets.

Adjustable Pad $10.00 each
Adjustable Harness $6.50 each f.o.b. Chicago. Lettering on pad at only $1.00 per order extra.

Write for latest folder and prices on pads for refrigerators, washers, ironers, ranges, radios, etc.

BEARSE MANUFACTURING COMPANY
INCORPORATED 1921
3815-3825 Cortland Street, Chicago, Illinois

Brown & Burns Moved In G-E Changes

PORTLAND, Ore.—E. W. Brown, formerly General Electric district appliance sales manager in Salt Lake City, has been appointed district representative for refrigeration sales with headquarters here.

J. J. Burns, formerly assistant district manager in San Francisco, has been appointed district representative for electric clock sales, with headquarters in San Francisco.

Milwaukee Distributor Has New Location

MILWAUKEE—Refrigeration Specialty Co., distributor of refrigerators and air conditioning units, has signed a lease for 10,000 square feet of space at 1011-15 N. Water St.

Rex Cole Opens a Midtown Showroom

(Concluded from Page 1, Column 2)

Showroom and the mezzanine were sub-leased from the National Cash Register Co. Space on the fourth floor, known as rooms 417 to 425, was leased from the Bartholomew Holding Corp., owner of the building.

"The new quarters will afford us a centrally situated showroom," declared Mr. Cole, "and the size of the display room will enable us to assemble a larger number of complete electric kitchens from the smallest apartment house size to the largest one made for a big home. The showroom will be lighted with the most up-to-date fluorescent equipment.

"The large mezzanine will be occupied by our sales, advertising, and sales promotion departments. In the rear of the main floor will be a large meeting room for sales training and consumer group demonstrations. Executive, operating, insurance, credit, bookkeeping, order, and treasurer's departments will occupy the fourth floor quarters."

Since 1935 Rex Cole, Inc. had maintained headquarters at 25th St. and Hunters Point Ave., Long Island City. The company was named G-E distributor early in 1927, and on June 1 of that year took a small showroom in the French building at 7 E. 45th St., New York City.

Rapid expansion of the business necessitated the leasing of office space in the upper floors of the building. Two years later the company moved to 265 Fourth Ave.

Frozen Foods Field In Rapid Advance

(Concluded from Page 1, Column 1)

foods in a few stores in Springfield, Mass., in the spring of 1930.

"Only a few hotels, restaurants, and hospitals," he said, "used the new foods in 1930. Now thousands of institutions regularly serve such foods.

"Showcases back in 1930 cost as high as $2,000. Today they cost only a few hundred dollars. Then our machinery was stationary and bulky. Today it is more compact and efficient and can be moved around to follow harvests.

"Frosted foods prices are lower today than in 1930. The products have been improved in quality and increased in number of items offered. Now we have scientific backing for the vitamin content of these foods. Only a little more than a decade ago a few persons were employed in quick freezing. Today there are many thousands of people so engaged.

"The new quick-freezing industry has created benefits, not only for consumers using the products and merchants selling them but also for thousands of farmers, rail and truck workers, makers of containers, pumps, compressors, and other machinery and equipment. We hope the way can be kept open so that quick freezing can continue to grow and serve.

"We want to keep the long-range point of view. Some day the peak of the armament program will pass. We don't relish the idea of those workers out of jobs.

"Quick freezing greatly expanded can be of great help after the armament program has been completed. We are going to keep plugging, not only on quick freezing but on other forms of research.

"Research is one of the factors that will make America greater. And, through enterprises like quick freezing, we are going to do our part."

Other speakers at the luncheon included Edwin T. Gibson, president of Frosted Foods Sales Corp.; Dr. Faith Fenton, professor of foods and nutrition, Cornell University; and Paul V. McNutt, Federal Social Security Administrator and Defense Coordinator of Health and Welfare.

Carrier Corp. 1940 Profit Is Greatest

(Concluded from Page 1, Column 4)

orders in Carrier's history, amounting to $4,903,000, was carried over into 1941. Orders booked for standard products since Jan. 1 are double those for the same period in 1940.

In addition to the orders for standard products, this company has orders for special defense work from the United States Government.

Total taxes paid or provided for in 1940 were $448,188.

As factors in contributing to the improved showing, Mr. Lyle listed "the greatly increased use of Carrier centrifugal refrigerating machines in the production of synthetic products and in blast furnaces; a greater volume of manufactured products as distinguished from completely installed contracts; and closer collaboration with architects, consulting engineers, and contractors."

Hawaiian Plumbing Co. Opens Display Rooms

HONOLULU, T. H.—New display room featuring air conditioning and commercial refrigeration equipment was recently opened at 653 Ala Moana Ave. by Hawaiian Plumbing & Sheet Metal, Ltd.

THE ORIGINAL
Velvet Action VALVES

A precision type for every need . . . Thermal Expansion, Constant Pressure, Automatic, Retarder, Defrosto and Check Valves.

Peerless OF AMERICA INC.

Model VL

Midwest Factory, General Offices—515 West 35th Street, Chicago
Branch Offices: New York, Los Angeles, Dallas. Export Div., Detroit

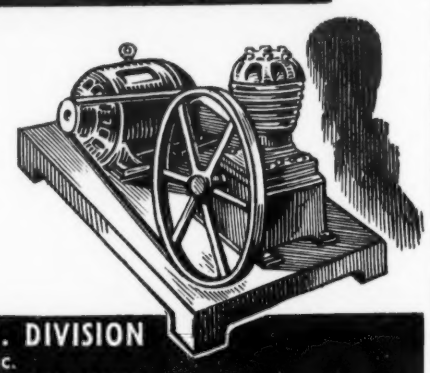
MANHATTAN V-BELTS

Cut service costs

MORE POWER
Side compressibility grips the grooves and prevents slip—flexibility gives uniform "pull."

LONGER WEAR
Endless cord floats in rubber on neutral axis —gives greater strength, resists internal heat and side wear.

SILENT RUNNING
MANHATTAN V-Belts run smoothly and quietly.



THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
45 Townsend Street Passaic, New Jersey

May Loses Plea For Debt Extension

BALTIMORE — Proceedings in which the May Oil Burner Corp. sought a court order allowing an extension of time for the payment of unsecured debts under a provision of the new Federal Bankruptcy Act were dismissed by Judge William C. Coleman, in the United States District Court here recently.

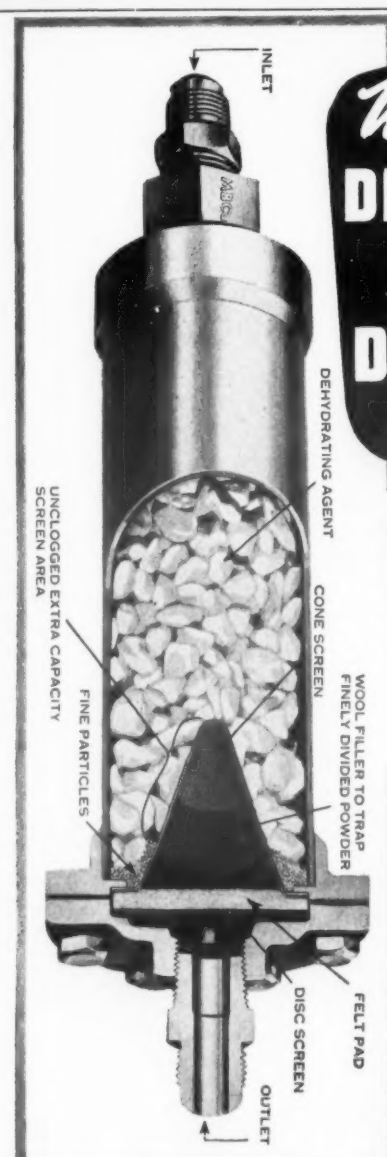
The action of the court was taken after it was stated that creditors would not accept the proposed reorganization plan or any other proposal suggested by the May Oil Burner concern. In seeking the extension, the company disclosed that it owed debts of $270,000.

12 Anderson Dealers Sign For Show

ANDERSON, Ind.—Twelve dealers have already agreed to participate in the annual spring show, to be held April 1 to 3 by the Anderson Electric Household Appliance Association and the municipal light & power company. Cooking school directed by Miss Florence Rose, home economist for the utility, will headline the event.

Participating dealers include: Bob Brown's Electrical Store, Anderson Home Appliance Co., Dobson's, Inc., Hoosier Maytag Co., Liberal Credit Store, Kaufman Hardware Co., Montgomery Ward, Hill's Department Store, Sears-Roebuck, Rogers Electric Co., Banner Store, and John Kelley Furniture Co.

New officers of the association are: president, Robert Brown, Bob Brown's Electrical Store; vice president, Claude Dobson, Dobson's, Inc.; secretary, Harry Jones, Hoosier Maytag Co..



When You Buy DEHYDRATORS Also Buy DEPENDABILITY

● Mueller Brass Co. Dehydrators are provided with a greatly improved feature...THE CONE SHAPED SCREEN, as illustrated here.

The cone shaped screen filled with pure wool, directs the fine particles of the drying agent to the outside of the base of the cone. Any particles that pass through the screen will lodge in the wool filler without clogging, leaving the center free for the passage of the refrigerant.

We build a complete line of reliable dehydrators, and they are sold at a fair price. We know the consumer does not want an inefficient dehydrator even at the saving of a few cents, and we don't believe that you would knowingly risk the possible loss in dollars as well as in reputation. A small increase in cost necessary to make any device thoroughly reliable is always justified. When you buy dehydrators, also buy that dependability which is built into all Mueller Brass Co. time-tested refrigeration Products.

MUELLER BRASS CO.

MUELLER BRASS CO. REFRIGERATION PRODUCTS

Your jobber deserves your patronage. He assembles thousands of products of hundreds of manufacturers from all parts of the country. He stocks them under one roof so that you can get what you want in a hurry, and at the right price.

PORT HURON, MICHIGAN

FROM 1/4 to 25 TONS OF REFRIGERATION

Brunner Refrigerating and Air Conditioning equipment comprises air and water cooled condensing units for practically all types of commercial applications up to and including 25 tons of refrigeration. Catalog promptly on request. Brunner Manufacturing Co., Utica, N. Y., U. S. A.

BRUNNER

FOR YEARS THE SYMBOL OF QUALITY

Anaconda Copper Refrigeration Tubes

Unusually soft!

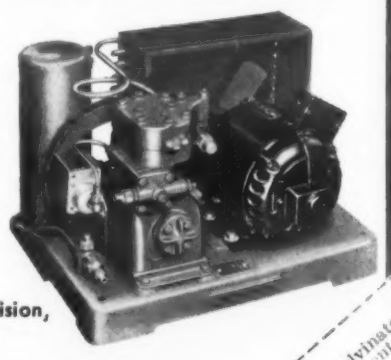
THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

Sure It's a Good Job —I've Used KELVINATOR Refrigeration Parts

No need to say more! When you've used Kelvinator refrigeration parts and supplies you and your customers know your jobs are RIGHT!

Kelvinator now offers a complete line of refrigeration supplies and condensing units, PRICED RIGHT TO HELP YOU TO DO MORE BUSINESS. Prompt deliveries are made possible by a nation-wide system of strategically located stocks.

Get set now to make money with Kelvinator supplies and equipment. Use the coupon!



Kelvinator Commercial, Parts & Service Division,
Nash-Kelvinator Corp., Detroit, Mich.

Get More— Get KELVINATOR

Please send me complete information on Kelvinator
☐ Parts and Supplies ☐ Commercial Equipment
Name.....
Address.....
City..... State..... K-107

WHO'S WHO WHERE

Litle To Direct Bendix Appliance Engineering

THOMAS J. LITLE, JR.

* * *

SOUTH BEND, Ind.—Thomas J. Litle, Jr. has been appointed director of engineering for Bendix Home Appliances, Inc.

Mr. Litle comes to Bendix from Easy Washing Machine Co., where he was chief engineering executive for four years. At one time he was chief engineer for Copeland Refrigeration Co. of Detroit, and has to his credit some 360 inventions in use in the automotive and refrigeration industries.

As director of engineering and production for the Lincoln Motor Car Co., Mr. Litle collaborated with Packard, Ford, and Cadillac during World War 1 in development and production of the Liberty motor under government direction.

When Ford purchased the Lincoln company, Mr. Litle became engineering production executive of the Lincoln division of Ford Motor Co. and acted as personal engineering advisor to Henry Ford. He is a former president of the Society of Automotive Engineers.

Rushton Equipment Is Dealer For York

BIRMINGHAM, Ala. — Rushton Equipment Co., 2124 Fourth Ave., S., an affiliate of Birmingham Ice & Cold Storage Co., has been appointed dealer for York commercial refrigeration and air conditioning equipment in Birmingham and the northern half of Alabama.

Ideal Plumbing Takes G-E Lines

ST. LOUIS — Ideal Plumbing & Heating Co. has been named General Electric dealer for refrigerators, ranges, home laundry equipment, stokers, and air conditioning. The firm, headed by A. J. Buckel, also handles large scale commercial refrigeration and air conditioning installations.

Rider Named Manager of Plandaire Advertising

PITTSBURGH—Roscoe C. Rider, Jr. has been appointed advertising manager of Plandaire, Inc., manufacturer of ceiling type air diffusers. Mr. Rider was formerly associated with Sanitary Standard Mfg. Co., Inc. and more recently with Acheson Mfg. Co. of Rankin, Pa.

Western Auto Store Takes Kelvinator

WAYNESBORO, Va. — Western Auto Supply Co. has been named dealer here for Kelvinator appliances.

Danby Furniture Adds General Electric Lines

ST. LOUIS—Danby Furniture Co., headed by Dave Goldring, has been appointed General Electric dealer for refrigerators, ranges, washers, stokers, and package air conditioning.

Wesco Promotes 3 In Dallas Division

DALLAS, Tex. — C. D. Allison, Glenn Newton Pollock, and F. Ray Hill have been appointed managers in the Southeastern division of Westinghouse Electric Supply Co., announces R. G. Berle, district manager.

Mr. Allison, formerly merchandise service manager, will manage advertising and sales promotion. Mr. Pollock, new merchandise service manager, joined the staff in March, 1940, as a service man after working for Texas Norge Sales Co. since 1931. Mr. Hill, who became a salesman for the company in January, 1940, has been named merchandise manager.

Beckman Joins Agency In Cincinnati

CINCINNATI—James W. Beckman, formerly director of public relations for Crosley Corp., has joined the staff of the Wiesen-Hart Press here in creative sales and advertising work.

A pioneer in automotive, aviation, and home appliance advertising and public relations, Mr. Beckman was at one time associated with the former Copeland organization. He wrote the only history of the invention of the electric refrigerator, and placed the first practical model in the Smithsonian Institution, Washington, D. C.

Sanborn Joins Manchester Coal & Ice Company

MANCHESTER, N. H.—F. Melvin Sanborn has joined the sales force of the Manchester Coal & Ice Co., dealer in electrical appliances as well as coal and ice, as wholesale representative for Kelvinator and Leonard refrigerators and appliances.

Prior to joining Manchester Coal & Ice Co., Mr. Sanborn was affiliated with Wahn Sales Co. of Boston, and Auto Electric Service Co. of Manchester.

Dinham Named Marsh Representative

MINNEAPOLIS — R. G. Dinham, 814 Wesley Temple building, has been appointed representative of Jas. P. Marsh Corp. in the Minneapolis territory. Mr. Dinham succeeds the partnership operated by R. B. Mosher and himself under the name of Heating Equipment Co., which has now been dissolved.

Steinko Leaves Crosley For Army Training

CINCINNATI — Truman Steinko, sales promotion manager of the refrigeration division of Crosley Corp., has been inducted into the army for a year's selective service training at Camp Shelby, Miss., and has been granted a leave of absence from his duties with the company.

Mr. Steinko joined Crosley last year after a wide range of experience in the major appliance field, and has been supervising sales promotional activities on ranges and washers as well as refrigerators.

Methodists Name Ahn As Publicity Head

CHICAGO—George B. Ahn, Jr., formerly editor of sales publications and publicity manager for Kelvinator and Leonard, has been appointed manager of the Chicago office of the Bureau of Public Information of the Methodist Church. He will handle publicity in 22 central and western states.

Yeatman & Sons Appointed Dealer For Norge

ARLINGTON, Va.—Geo. M. Yeatman & Sons has been appointed Norge dealer here.

Philadelphia Manager

E. K. SWEENEY

* * *

Sweeney Heads McQuay's Philadelphia Area

PHILADELPHIA—E. K. Sweeney has been appointed Philadelphia area distributor manager for McQuay, Inc. He will represent all McQuay products, including heating and cooling coils, unit heaters, convectors, air conditioning units, and refrigeration equipment.

For the past four years Mr. Sweeney was a member of Breitenbach & Sweeney, handling Trane.

Westinghouse Appoints 4 Vice Presidents

EAST PITTSBURGH, Pa.—Election of four Westinghouse executives to the rank of vice president has been announced by A. W. Robertson, chairman of the board.

New vice presidents are Bonnell W. Clark, New York City, now president of Westinghouse Electric Supply Co., a subsidiary; R. A. McCarty, Philadelphia, manager of the steam division; Frank D. Newbury, Pittsburgh, manager of the emergency products division; and A. C. Streamer, Pittsburgh, general manager of the East Pittsburgh division.

Mr. Clark joined Westinghouse Supply in 1925 as a special representative, and has watched the organization grow from 14 electrical jobbing houses to a network of 79 branches in the country's principal marketing centers. He became general manager in 1929, vice president and director in 1932, and was elected president in 1937.

Duquette Joins Sales Staff of Nelson

BALTIMORE—Ernest H. Duquette has joined the sales staff of Nelson & Co., Inc., distributor for Gibson refrigerators and ranges and Farnsworth radios. Mr. Duquette was retail sales manager for the former Hines Co., G-E distributor, and recently headed refrigeration sales for Consolidated Gas Light & Electric Co.

Now With Crosley

C. WILLIAM RADOS

* * *

Rados Directs Crosley Sales Promotion

CINCINNATI—C. William Rados, formerly manager of Kelvinator's National Salesman's Institute, has been appointed sales promotion manager of the refrigeration division of Crosley Corp.

Manager of the Kelvinator sales training organization since 1938, Mr. Rados was formerly a business editor and writer, and joined the staff of Tradeways, Inc. in 1929 to become a teacher of salesmen.

No. 3 OF A SERIES OF ADVERTISEMENTS DESIGNED TO HELP YOU SELL REFRIGERATORS FASTER.

KNOW YOUR MOTOR RATINGS!

Well, thanks for your time. But I'm afraid the price is a little too high. I guess we'll make our old one do for a few years more.
But yours is 5 years old. This new unit runs on a lower horsepower motor. It saves money every month because it uses less electricity.

You help your sale when you can prove how modern motors use less power and do a better job at lower cost!

BY USING this knowledge of motor ratings, you can show prospects how they can actually save money by buying a new refrigerator.

By using your knowledge of another feature which almost every prospect is keenly interested in—*the finish*—you can arouse quick interest. For there's scarcely a dealer in the country who won't freely admit that the finish is one of the first things a woman wants to know about.

And the superlative advantages of DULUX offer you one of your most potent sales arguments. You can point to the DULUX seal and say, "Madam, this finish is made by Du Pont. You can *see* how white it is. After years of use it will *still* be white. In fact, DULUX has everything . . . ease of cleaning, resistance to chipping, cracking, food and grease stains. You'll find it saves you work."

What prospect's eyes wouldn't brighten up? Feature DULUX in your sales talks—early and often. Many a successful salesman will tell you it *pays*. E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.

FREE... SEND FOR THIS BOOK!

▶ Du Pont has prepared a new book to help you in your sales. It's called "How DULUX Has Helped in the Sale of More Than 9,000,000 Refrigerators." It's yours for the asking. Just write to: E. I. du Pont de Nemours & Co. (Inc.), Room 7156, Du Pont Bldg., Wilmington, Del.

DU PONT REG. U.S. PAT. OFF. DULUX REG. U.S. PAT. OFF. FINISH ON EXTERIOR

DULUX REG. U. S. PAT. OFF. DU PONT REG. U.S. PAT. OFF.

THE MODERN FINISH FOR MODERN LIVING...*It saves work*

'Spot' Cooling Keeps Keglers Comfortable

KANSAS CITY, Mo.—An air conditioning system which confined heating and cooling to the "action spots" only in a bowling alley has been installed in the Plaza Bowl here by Dean-Hagney Corp.

The 70-ton York system was designed by Frank Dean, president of the firm.

No heating or cooling is required over the 32 bowling alleys in the building except between benches and foul line, and over the space occupied by the pin boys. The air conditioning system serves these "action spots" and also the restaurant and bar, and a banquet hall upstairs.

Conditioned air amounting to 50,000 c.f.m. is distributed through a five zone system. One serving the foul line area of the bowling alleys is equipped with five Anemostats.

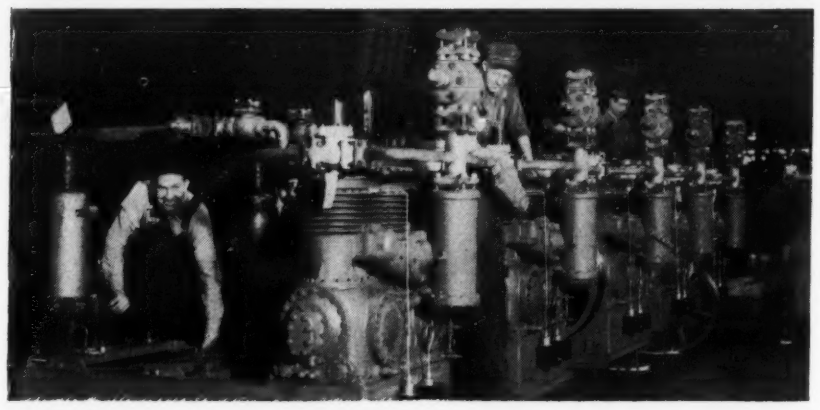
The basement alleys are served by another zone using the same method of air distribution.

Anemostats and circular ceiling grilles are used on the zone which distributes conditioned air to the restaurant, bar, and banquet hall, and finally, one long duct is used to supply cool air to the pin boys.

Heating for the pinsetters is furnished by one 300,000 B.t.u. gas-fired unit heater.

Heating for the air conditioning system is supplied from a central boiler in the building and direct-expansion cooling is provided by the 70-hp. York machine.

F-M Speeds Defense Production



These are busy days at Fairbanks, Morse & Co. where large numbers of compressors, sold for use in army cantonments, are coming off the line.

Toto and Gargantua Await Cupid In Twin Air Conditioned Cages

SARASOTA, Fla.—Air conditioning is playing an important supporting role in a strange romance—the mating of Gargantua the Great and Toto, the 438-lb. lady gorilla—now being carried on from duplicate, $20,000 glass-and-steel enclosed cages in the winter quarters of Ringling Brothers-Barnum & Bailey circus here.

Gargantua's African-born and Havana-bred mate-to-be is being pampered to an even greater extent than the 600-lb. brute, whose air conditioned cage is considered one of the chief reasons why he has survived the hardships of 75,000 miles of exhibition touring, and is the first gorilla ever to thrive in prolonged captivity.

New safeguards against pneumonia and colds—the two germ diseases to which gorillas in captivity are most susceptible—are among the improvements in the specially constructed Carrier air conditioning system for Toto's cage. The air will be the most carefully treated ever supplied to either man or beast.

Temperature within the cage will never vary more than 1° F. per hour from the fixed temperature of 76° F. Temperature will never fall below 75½° even when it is as low as 15° outdoors nor will the temperature rise above 76½° in the warmest weather encountered.

During transition periods, when outside temperature is undergoing rapid changes, both refrigeration and heating units are kept on. Through a unique system of thermostatic controls, cooling or heating units automatically "cut out" when the temperature hits certain levels.

Another new wrinkle in Toto's cage conditioning is a "positive ventilator," insuring a fresh supply of filtered air at all times, ranging from 80 to 200 c.f.m., depending upon how active Toto happens to be.

A 3-ton air conditioning unit and three electric strip heaters maintain a temperature and humidity which carefully parallels the climate of the Belgian Congo. Any sharp deviation from the 76° temperature and 50% relative humidity might induce pneumonia in the 438-lb. female gorilla.

A Diesel generator will supply power for air conditioning, lighting, and cooking in the new cage, as well as in Gargantua's present cage, when the gorillas are in transit, on parade, or during loading and unloading for ship or train travel. When in side shows the power will be furnished from local power lines. The Diesel and air conditioning equipment weigh less than 1 ton.

A "kitchen" compartment, equipped with an electric stove to provide cooked meals for Toto on the road, is another innovation.

Buffalo Council Fights Licensing Ordinance

BUFFALO—City legislation which would require the licensing of all stationary engineers is being opposed by the Air Conditioning Council of Western New York. At a recent meeting of the group, Richard H. Mollenberg, president, reported that the association, in cooperation with other groups, was successful in having the legislation tabled last year, but that it had come up again.

Mr. Mollenberg appointed a committee consisting of William A. Meiter, Roswell Farnham, Joseph Davis, and Walter P. Davis to represent the Air Conditioning Council in the fight to defeat this legislation, which he described as detrimental to the interests of the air conditioning industry.

New Detroit Firm To Specialize in Sale Of Packaged Units

DETROIT—American Air Conditioning Co. has been organized here by W. J. Brinkmann, former manager of the Detroit office of Standard Air Conditioning, Inc. The firm will handle York packaged air conditioning in capacities from 2 tons to 15 tons, Walton Humidifiers, and a special window ventilator fabricated to the company's specifications.

According to Mr. Brinkmann, the firm will engage in a merchandising operation and will not attempt to take large air conditioning contracts. Charles F. Watson will be associated with Mr. Brinkmann in the new concern.

Headquarters will be maintained in the Boulevard building here.

Westerlin & Campbell will continue to distribute all products in the York line in this area.

Fair and Cooler

By Henry Knowlton

At Last—Marshall Field's Cools Basement Store

Last year when a NEWS reporter visited the basement of Marshall Field's store in Chicago and found sheet metal work under construction, he suspected that the store's many year hold out against air conditioning was over. An interview with the chief engineer, however, brought forth the information that the store did not contemplate the purchase of cooling equipment, and that the elaborate duct system was for ventilation only.

Because of the outright denial that air conditioning was contemplated the NEWS reported that Marshall Field's basement was being equipped with a ventilating system.

But now it can be told. Carrier Corp. has announced the sale of two centrifugal refrigerating machines having a total of 1,000 tons capacity to cool the basement of Marshall Field's Chicago store.

* * *

Studebaker Places Large Defense Plant Orders

Other large Carrier orders of recent weeks include four centrifugal refrigerating machines totaling 4,600 tons for the Studebaker aircraft engine plant at South Bend, Ind., and three machines totaling 1,425 tons for the Studebaker aircraft gear plant at Fort Wayne. Both plants are devoted to national defense.

* * *

Effective . . . If Not Ethical

A commercial refrigeration dealer in a small Pennsylvania town has developed a unique method of securing prospects. Calling his competitor on the telephone the dealer inquires in a very businesslike voice, "Is Mr. Jones in?"

"I'm sorry," comes the voice-on-the-other-end, "Mr. Jones is not here this morning."

"It's important that I locate Mr. Jones right away," says Mr. Dealer. "Where can I reach him by telephone?"

"Well, he went over to Countryville to see about some refrigerated cases for the Quality Supermarket—you could get him there by telephone," the voice answers.

"You will excuse me—I have to go to Countryville right away—got a prospect over there—goodbye."

* * *

New Deepfreeze Unit

Close tolerances required in building aircraft motors, machine guns, and many other parts utilize "shrink fits"—where one part is heated, the other cooled, and when returned to normal temperatures the result is an absolutely tight contact.

This process requires both heating—and refrigeration. Deepfreeze division of Motor Products Co. has recently announced a new industrial unit for this purpose. Temperatures to minus 50° F. make the unit adaptable to many defense production uses.

Radiant Heating Job At Johnson Wax Is O.K.

Persistent rumors that the radiant heating system in the Johnson Wax Co. plant at Racine, Wis. is unsatisfactory are entirely unfounded. Reports in the trade have ranged from rumors of employes getting athlete's foot from the heated floors to reports of expansion cracks in concrete slabs over the coils.

David Davies of S. C. Johnson & Son, Inc. reports, "A building which has received so much favorable publicity and is so unusual is bound to bring forth many stories which have no foundation. Frankly, we have had no trouble with our heating system, nor have we made any but minor adjustments to it since it was installed. We are well satisfied with the operation from all angles."

The Johnson Wax Co. building was designed by Frank Lloyd Wright.

* * *

How To Keep 77,000 People Comfortable

An air conditioning program in the Merchandise Mart, Chicago—world's largest building—has been going ahead piecemeal since 1937. According to W. A. Stahl, operating manager of the vast structure, seven of the 18 floors now have complete air conditioning and provision has been made for the ultimate use of six 1,000-ton compressors.

When the building was completed early in the nineteen thirties, only two air conditioning systems were in use, serving the theater and restaurant. Now many individual systems provide comfort for the NBC studios, and for individual tenants.

Mr. Stahl has a big job ahead. Five miles of corridors will eventually be lowered to accommodate ductwork; 27,000 tenants and 50,000 transients a day must be kept comfortable; condensing water from the Chicago river enters the building through 14-inch pipe lines.

All equipment purchased by Mr. Stahl is "better than standard" and is depreciated over a 15-year period. He estimates that the cost of air conditioning a large building today is approximately $1.50 per sq. ft. of floor space; cost of operating is 30 cents per sq. ft. of floor area per year.

* * *

Exit Rhumba Enter Bowling

An air conditioned bowling alley, complete with turkish bath, massage, and all the trimmings is to be built in the Earl Carroll theater, New York City. Last feature attraction there was Billy Rose's night club—Casa Manana.

* * *

What Will Be the Next Great Forward Step?

Willis H. Carrier declares the greatest forward steps in air conditioning have been:

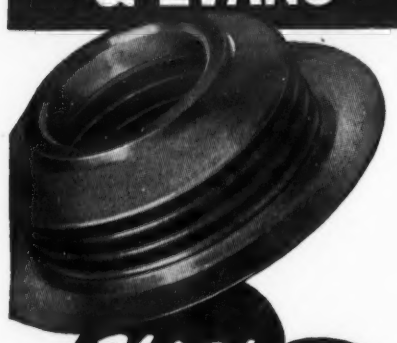
1902—Dewpoint control spray units.
1911—Rational psychrometric formula.
1912—Extended coil surface.
1922—Centrifugal machines.
1932—"Freon" refrigerants.
1932—Evaporative condensers.
1933—Packaged air conditioning.
1935—Improved air distribution.

* * *

New G-E Dealers In St. Louis

ST. LOUIS—New General Electric appliance dealers appointed recently by James & Co., distributor, include Barr Furniture Co., 1402 Salisbury Ave., a new firm, and City & Country Refrigeration Co., 152 W. Argonne, in suburban Kirkwood. These appointments bring the total number of dealers to well over ninety, according to Robert Brenner, James' promotional manager.

MERCHANT & EVANS



uses SYLPHON BELLOWS

For the Heart of Good Crankshaft Seals . . .

Years ago Merchant & Evans, one of the pioneers in electric refrigeration, developed a Sylphon Bellows crankshaft seal so effective it has since been used in every M & E compressor, from ¾ hp. up to the largest commercial units.

The Sylphon Bellows is a positive seal under all conditions, a permanent seal that cuts servicing costs. For M & E it . . . "minimizes power consumption and wear . . . compressors are quieter in operation."

You can profit from the experience of those who use Sylphon Bellows . . . the seamless, jointless, time-tested "Miracle in Metal" that serves so many purposes for leading manufacturers everywhere.

Consult with Sylphon engineers. Write for Bulletin FO-535.

Sylphon SEAMLESS METAL BELLOWS · AND THERMOSTAT ASSEMBLIES

THE FULTON SYLPHON CO.
KNOXVILLE, TENNESSEE
Representatives in All Principal Cities in U. S. A. and in Montreal, Canada and London, England

★ ★ ★ ★ ★ ★ ★ ★ ★

MILLS MIGHTY REFRIGERATION

Mills Condensing Units
By Mills Novelty Company
4100 Fullerton Ave., Chicago, Ill.

★ ★ ★ ★ ★ ★ ★ ★ ★

Anaconda Copper Refrigeration Tubes

THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn

Why Is A Sales Meeting?

Why is a sales meeting? When and how should these meetings be conducted? Where should they be held? What makes a sales meeting dull? Answers to these and other questions about this important phase of merchandising activity have been obtained in a survey of sales managers of various appliance firms in Portland, Ore. They are presented here in summary form in the hope that they may be of some help to other sales managers who may be finding it difficult to generate the proper enthusiasm and spirit of cooperation among the members of their sales force.

WHEN, AND HOW OFTEN, SHOULD SALES MEETINGS BE HELD?

"Meetings should be held at a time agreeable to and convenient for the men, as well as for the management," said W. L. Bowden, sales manager of the two H. A. West Co. stores. Until they grew tiresome, Mr. Bowden held sales meetings for his force of 14 men every morning. Now, the meetings are held for 30 to 60 minutes every Monday morning.

One sales manager swears by a 10-minute sales meeting taking place every morning before the store is opened. This program is varied by having every Monday meeting a breakfast meeting, with the breakfasts "on the house."

"It seems to me that the frequency of sales meetings is a matter which depends entirely upon the individual sales manager and his sales force," declared Arnold E. Kuhnhausen, sales manager and co-owner of Kuhnhausen's Electric Co.

"If the results of a once-a-week meeting can be noticed all through the week, with no let-down toward the end of the period, that system could be used. But if there are signs of lassitude on the part of the salesmen a day or two before the next meeting is to take place, the sales manager would be wiser to schedule meetings two or three times a week, or even every working day."

Personally, Mr. Kuhnhausen does not schedule his sales meetings regularly, but instead holds them whenever he sees need for discussion of a particular problem. It is his idea that an irregular arrangement is more interesting to the men than a regular schedule. Whenever such a meeting is called, it takes place in the evening and lasts approximately an hour.

WHERE SHOULD THE SALES MEETINGS BE HELD?

The sales managers unanimously agreed that the place of meeting is not important, just as long as arrangements are made so that the meeting will be uninterrupted.

An inside office is preferable to the showroom, they agreed; a room where posters or exhibits may be shown and kept from one meeting to the next is ideal.

But they warned that the really important thing is to be very sure that no one, not even the person conducting the meeting, is called from the room to answer the telephone or for any other reason. Such a break in the meeting is sufficient to spoil its effect, they pointed out.

Incidentally, all felt that promptness in starting and closing the sales meeting is essential.

WHAT TYPE OF MEETING IS MOST DESIRABLE— FORMAL OR INFORMAL?

On this point, again, all the sales managers interviewed agreed, believing that the informal type of meeting is by far the most successful. In such a meeting, they said, the salesmen are relaxed, ready either to laugh or to be serious, and in general to respond to the mood of the person conducting the meeting. The salesman is far more responsive when he is relaxed and comfortable, they explained, then when he is stiff and tense from the "cold" and unfriendly atmosphere of a formally conducted meeting.

WHAT SHOULD WE DO IN OUR SALES MEETINGS?

Each sales manager interviewed had a number of ideas for sales meetings. Combined, their ideas form a list with interesting possibilities. All of the sales managers stressed the fact that the meetings should be varied as much as possible, both in subject manner and in procedure, in order to keep them from becoming monotonous.

Here are a few suggestions which they offered for interesting and helpful meetings:

(1) Arrange a debate between two of the salesmen on some point of salesmanship. For instance, one man may present points proving that "It is good salesmanship to follow up a direct mail piece with a personal call." The other man will attempt to prove points for the opposite side of the question.

Such debates frequently stir up so much interest among the men that they themselves will ask to have a certain question debated.

(2) Occasionally an outside speaker may be invited to give his views on salesmanship. He may be the sales manager of a firm in another kind of business—an automobile agency, for instance.

Outside speakers on subjects other than on salesmanship will give nice variety to your meetings. An occasional speaker on some phase of business trends, for instance, will tend to give the men a feeling of belonging to the world of business, and to broaden their vision.

(3) Open forums have always been entered into with enthusiasm by electrical appliance salesmen. Some phase of salesmanship is chosen for the subject of the forum. The meeting may be handled by the sales manager himself, or by one of the men.

In this type of meeting, warned Mr. Bowden, it is essential that the chairman be careful that the men are kept on the subject.

(4) The popularity of radio quiz programs has given rise to a new and very effective type of sales meeting, conducted along the lines of "Information, Please." The sales manager or one of the salesmen may be the quizzer; the questions may be on the merchandise or on salesmanship.

(5) The advertising program is sometimes overlooked. Whenever an electrical appliance firm is launching a new advertising program, the sales manager of that firm has an opportunity for a meeting which will please the sales force; a meeting in which the new advertising campaign is outlined to the men, dummies of newspaper advertisements are shown to them, and discussion is invited. Purpose of this type of meeting is to sell the men on the advertising program. If they are truly convinced that the campaign outlined to them is to be an effective one, their spirit of cooperation is apt to be greatly increased.

(6) Merchandise meetings are stressed by some sales managers, not by others.

Mr. Kuhnhausen never holds a merchandise meeting. "Whenever the factory or distributor's representatives are holding a meeting which would be of interest to us, our sales force attends en masse," he said. "But as for selling our merchandise to our men in the meetings—we never do it. We expect our men to read the manufacturer's literature and to be thoroughly familiar with it; sales meetings are reserved for points of salesmanship."

Mr. Bowden is of a different opinion: "We ask factory representatives to speak at our sales meetings," he declared. "The factory men know their merchandise from every angle and are in a position to point out the selling angles to us. Our men must know the merchandise they are selling; we take every opportunity to teach them more about it."

WHAT MAKES A SALES MEETING DULL?

If your salesmen don't enjoy sales meetings, the sales managers agreed, it is a safe bet that they are not absorbing the points which you are attempting to get across to them. If they fidget after the first few minutes of the meeting, don't blame them; something must be wrong with the meeting itself. Nine chances out of 10, they said, the difficulty will be one of these:

(1) The meeting has not been planned in sufficient detail.

(2) The meeting is too much of a one-man show.

(3) The salesmen themselves are not allowed to participate.

All three of these difficulties may be easily ironed out by the sales manager, the Portland executives pointed out. He can plan the meetings so that they will go off like clockwork, and so that they will keep the salesmen alert to everything that is happening.

If you decide that your meetings are too much of a one-man show, these men advised, just step into the background for a while. You plan the meetings, but ask last week's star salesman to act as chairman, to introduce the speaker, or to conduct the open forum.

When the salesmen aren't participating, ask them leading questions, the sales managers suggested, to start them discussing sales points and thus to bring their interest back to the meeting.

HOW CAN WE BEST DRIVE HOME THE POINTS WE ARE TRYING TO MAKE?

No matter what type of meeting you choose, the men warned, remember that showmanship is the greatest factor in getting something across to your men. Not only talk about a thing, but let the men see that thing. Use charts, graphs, moving pictures, slides, demonstrations — all these make the points about which you are talking much more effective to the salesmen.

Then, too, the sales managers concluded, remember to wind up every sales meeting by summing up the points that have been covered. Check up, occasionally, to see how the suggestions made in the sales meetings are being used. Ask the men to try a new sales talk, a new approach, or a selling trick for a week. Then, at another meeting, find out what results they have been getting.

Mr. Kuhnhausen is emphatic about the importance of this business of checking up on the effectiveness of the points made in sales meetings. "If we have made a suggestion, our men practice that new method on their customers, and when there are no customers in the store, they practice on each other. At the next meeting they report back on the suggestion. If they decide that it is a good one, we adopt it. If not, we try something else."

Dayton Dealers' Show Has World's Fair Models

DAYTON, Ohio—Tiny models of refrigerators depicting the growth and development of automatic refrigeration over the past 23 years highlighted the refrigeration exposition held by dealers here March 10 to 15 at the Gas & Electric building.

The models, which attracted considerable interest at the New York World's Fair, were shipped directly to Dayton for their first showing since the Fair's closing.

Committee in charge of show arrangements consisted of K. Fitzpatrick, Jr., Roland Hand, C. V. Dilgard, and Wayne Wright.

Jones Buys Out Jones

WOLFEBORO, N. H. — Ernest Jones has purchased the appliance business formerly operated here by Richard Jones. The firm is known as Gas & Electric Service Co.

SERVEL *Silver Fleet*

COMMERCIAL REFRIGERATING MACHINES

"Beauty is only skin deep" . . . but under the lustrous silver surface of these sensational new Servel units, you'll find a degree of performance, economy and noiselessness never before available in low-pressure refrigeration. Write today for details. Servel, Inc., Electric Refrigeration and Air Conditioning Div., Evansville, Ind.

ALUMINUM, DEFENSE, AND YOU

ALCOA

1

WE INTERRUPT our regular messages to report what's what with aluminum.

AT THE MOMENT delivery for civilian use must make way for defense. Everybody knows the reason. Defense requires and is using more aluminum per month than peacetime America ever consumed.

NEVERTHELESS, we intend that no one shall have to forego the things aluminum can do best one minute longer than we can help.

THERE IS NO SHORTAGE of bauxite, nor of anything else, except time. And Father Time is being given the race of his life.

WE ARE MOVING, for example, 35,000 yards of earth a day at Alcoa, Tenn., to get 50 acres under a single roof by September. It will require 193 carloads of roofing felt. Some of the operations in that plant will start even before the walls are up. That's an annual rolling capacity for 120 million pounds of high strength alloy sheet coming along fast.

LAST MARCH WE STUCK the first shovel in a cow pasture near Vancouver, Wash. In September a 30 million pound plant was delivering metal. It has been doubled, already. A third 30 million pound unit starts delivering in April; a fourth in May; a fifth in June. From cow pasture to 150 million pounds annual capacity in 15 months.

A SIDELIGHT: To make that 150 million pounds of aluminum, we first have to build factories to make 120 million pounds of carbon electrodes. We have to obtain the equipment (transformers, rectifiers, and the like) to feed 162,500 kw. of electricity into the reduction furnaces. This is a generating capacity equal to that of the state of Delaware plus twice that of Mississippi.

WHAT OF TOTAL PRODUCTION? In addition to Vancouver, further installations are being made at other of our plants, so that in less than a year their total capacity will be more than double that of 1939, when 327 million pounds were produced.

IN THE VERY MIDST of this demand we have lowered the price of aluminum ingot 15%. We state, without reservation, our hope that the price can be still further reduced.

DEFENSE APPLICATIONS use aluminum for exactly the same reasons you do. Defense priorities on aluminum simply say that there are some fundamental things that aluminum does supremely well. It will do them still better as important lessons in production, fabrication, and application are learned from every additional pound being produced and used.

YOU, SIR, have been using aluminum in many forms, for many different purposes. It is not easy nor convenient to have to substitute other materials temporarily. We want you to know that we intend to make this hardship as short-lived as possible. Your aluminum is on the way. It is a promise.

ALUMINUM COMPANY OF AMERICA

AIR CONDITIONING & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office;
Established 1926 and registered as
Electric Refrigeration News

F. M. COCKRELL, *Founder*

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Salesmanship When Your Plant Is Full of Orders

BEST figure of speech describing the strange turnabout of events for manufacturers today is the quip that nowadays the purchasing agents are giving cigars to salesmen.

"Take this more comfortable chair," beams the purchasing agent, much as it hurts his case-hardened face to beam. "I'm sending a case of Scotch over to your hotel room. And now, when can we get deliveries?"

THIS SITUATION IS BUT TEMPORARY

The wise salesman—and the wise manufacturer—knows that this situation is but temporary. He knows also that this is a time to build goodwill. He won't kick in the teeth good relationships which he has so carefully nurtured down through the tough years behind (and which will come again — sooner than you think, perhaps).

He won't be like one small manufacturer the editor interviewed the other day. Said this shortsighted man, whose plant is booked to capacity for a year ahead:

"Hell, I don't even bother to make deliveries any more. If they want the stuff, they can come over and get it—and wait in line for it, too, by gum!"

This same manufacturer used to bombard his prospects with direct mail, personal calls, salesmen, and entertainment. His prospects, we predict, will remember that, and will remember even better this manufacturer's present attitude.

ONCE SOLICITOUS, NOW HE IGNORES

When this manufacturer wanted something from the prospect, he was mighty solicitous. Now that the prospect wants something from him, he ignores the prospect, or brushes him off quickly.

In this extraordinary cigars-for-salesmen period, the intelligent manufacturer will take note of the fine advertising job being done by the Aluminum Co. of America just now in AIR CONDITIONING & REFRIGERATION NEWS. Refrigeration is an industry which can't get nearly enough aluminum. Yet the Alcoa people are advertising in the refrigeration industry's business paper saying, in effect:

No, we can't fill your orders now. We are patriotically serving our country, giving its expanding armed forces the planes and other weapons it needs. But we haven't forgotten you. Our research scientists are studying your industry, your products, and finding new ways of using aluminum. When this emergency is over, we'll be able to serve you better than ever before. So keep us in mind, friends, for we're keeping you in mind.

Booked-to-capacity manufacturers should tell their old customers just why deliveries are slow, why their products must be rationed. They should help their old customers stay in business by showing them how they may be able to get along with less, how they can readjust to meet the new situation.

Friends are just as important to businessmen today as they ever were. Hence today's advertising and salesmanship should be devoted to preserving business friendship, toward maintaining the validity of trademarks and company goodwill.

TELL CUSTOMERS WHAT YOU ARE DOING

Tell customers what you are doing, explain to them some of your problems. At the same time, demonstrate that you not only understand their problems, and new difficulties, but are sympathetic with them. Tell them again how much you value their friendship, and their past patronage.

Tomorrow the competitive fight will be tougher than ever. The firm which has kept its friendships in repair will be the firm that will survive! And to that end, it should be noted that a firm's survival depends as much on tomorrow as it does today.

Salesmanship and promotion today should be directed toward tomorrow's customers.

To paraphrase George Washington, in time of war, prepare for peace.

LETTERS

SOUTH AMERICAN WANTS 'FRIGID-EYE'

Christianburgh
Wismar P.O., Demerara River
British Guiana, S. A.

Editor:

Please send me literature of the Frigid Eye Analyzer designed by Hemmerly of Scranton, Pa. and quote cost.

ANDREW DAS

Answer: The "Frigid-Eye" analyzer is made only by S. A. Hemmerly, and we are sending him a copy of your letter in the hopes that he will write you directly concerning this device. Mr. Hemmerly's address is Scranton-Norge Co., 1415 Ash St., Scranton, Pa.

This device was described in the Oct. 11, 1939; Jan. 10, 1940; and July 10, 1940 issues of AIR CONDITIONING & REFRIGERATION NEWS.

WHERE, OH WHERE IS THIS SOCIETY?

Acme A. R. Co.
P. O. Box 237
Lead, S. D.

Editor:

Please let me know where I could get information on joining "The Air Conditioning & Refrigerating Society" of America. Either they're in the Eastern or Western part of the U. S.

L. J. SEELIG

Answer: We do not know of any organization that has this particular name, but there are a number of societies and associations in the industry, one of which may be the one to which you have reference.

The American Society of Refrigerating Engineers is the main body of technical men in the industry. Its membership is composed of the leading engineers of all the leading manufacturers and the principal engineers for contractors and independent engineering organizations throughout the country. Its headquarters are at 37 W. 39th St., New York City.

The Refrigeration Service Engineers Society is an organization of refrigeration service men who do repair work on refrigeration systems and who actually install the commercial refrigeration systems. Its headquarters are at 433 N. Waller Ave., Chicago.

The National Air Conditioning Association is an association of air conditioning dealers and contractors—the companies which estimate, sell, engineer, and install air conditioning jobs. Its headquarters are at 220 E. 42nd St., New York City.

They'll Do It Every Time . . . . . By Jimmie Hatlo

—THIS BIG SHOT SMOKED LIKE AN INCINERATOR FOR 30 YEARS UNTIL —
BUT, DOCTOR (PUFF-PUFF) COULDN'T I CUT DOWN (PUFF) TO ABOUT TEN OR TWELVE CIGARS A DAY? I'M A BUSY EXECUTIVE, THEY HELP ME THINK — (PUFF-PUFF)
CUT OUT SMOKING ENTIRELY OR IN SIX MONTHS YOUR OFFICE FORCE WILL BE CHIPPING IN FOR A FLORAL PIECE.
SO HE QUIT— AND IT WASN'T HIS FAULT IF EVERYBODY ELSE DIDN'T, TOO.
PUT ONE ON EVERY WALL IN THE BUILDING. I WANT IT THOROUGHLY UNDERSTOOD.
NO SMOKING
JIMMY HATLO
1-29
Copr. 1941, King Features Syndicate, Inc., World rights reserved

HERE'S A JOB IN WEST INDIES

General Stores
P.O. Box 156
Curacao, Netherlands West Indies

Editor:

As a subscriber to your interesting paper I herewith take the liberty to request you kindly to assist me in the following.

I operate a store on this island, which sells mechanical refrigerators, and I am presently in need of a reliable service man, which is, however, not obtainable here.

I do not want an expensive engineer, because I have no work for him. My situation calls for a man capable of doing a good job in repairing household refrigerators, and with practical knowledge of installation and service of commercial equipment, such as display cases, beverage coolers, market coolers, and so forth.

My organization would pay such a man about $150 monthly. His local living expenses, if single, should be estimated at about $75 monthly. I am of course willing to make a contract and pay his traveling expenses.

I have in mind a young man between 20 and 30 years, preferably of Latin-American race, which has gone to the U.S.A. and gained practical knowledge of refrigeration there.

If it is possible for you to get me in contact with such a man, your help in this direction will be appreciated very much by the writer.

I anticipate my sincere thanks for your kind attention and remain,

TEOFILO S. CUALES, Manager

HOW TO DEPRECIATE CONDITIONING EQUIPMENT

Richardson & Richardson, Inc.
76-78 Garden St., near Pacific St.
Newark, N. J.

Editor:

Kindly advise if you know of any generally accepted figure on the rate of depreciation on industrial air conditioning equipment used for processing purposes.

L. LEE RICHARDSON

Answer: Modern air conditioning systems installed for industrial processing have a life about equal to the building in which they are installed. Normally, this would cover a period of from 10 to 15 years.

Where painting may have to be replaced in two years, certain valves in five or six years, experience has shown that reciprocating compressors and coils have a life of at least 10 years. With the maintenance given equipment used in a modern factory, air conditioning equipment can safely be depreciated over a period of 15 years.

Amortization of the investment must take depreciation and obsolescence into consideration. One is the rate at which the equipment wears out; the other the possibility of a competitor installing superior equipment for the same process and thus being able to produce goods at a lower price. It is also necessary to consider the interest rate involved, particularly when capital is diverted from the manufacturing operation to pay for air conditioning equipment.

Based on the above considerations, present day practice is to depreciate first class air conditioning equipment used in industry over a 15-year period.

SINGAPORE MARKET GROWING DESPITE WAR THREATS

Khoo Heng Pho & Co.
P. O. Box 317
Singapore, Straits Settlements

Dear Sirs:

We shall be glad if you will send us the following for which please apply to our American principals the Winchester Repeating Arms Co., New Haven, Conn., for shipping instruction and payment, attention of Mr. W. M. Thompson.

(1) Three volumes of Commercial Refrigeration Service, C-1, C-2, C-3, at $1 each list.

(2) Two volumes of Soda Fountain Refrigeration manuals, SF-1, and SF-2 at $1 each list.

(3) Seven volumes of "A Course of Study in Air Conditioning" at $1 each list.

(4) Household Refrigeration Service (four) volumes at $1 each.

(5) Refrigeration Engineers' Manual at $2 each.

(6) Refrigerated Locker Storage at $1 each.

and continue one year's subscription to your AIR CONDITIONING & REFRIGERATION NEWS as from October, 1940.

We import and sell a lot of Technical and Industrial Publications and if your books are suitable for this country, we shall be glad to take up the sale out here, so please let us know your Trade discounts.

KHOO HENG PHO & CO.

WIRE SCREEN THAT SERVES AS AWNING

Indianola, Ill.

Editor:

Am enclosing $1.00 in cash for which please send me one copy of Manual No. LS-1.

In one of the issues of the NEWS of last year I noticed the announcement of a new screen wire that serves as an **awning**(?). Can you give me information as to where and from whom this product may be purchased.

O. M. WALTHALL

Answer: The "new wire screen that serves as an awning" mentioned in your recent letter is the "Koolshade" made by Ingersoll Steel & Disc Div., Borg-Warner Corp., 310 S. Michigan Ave., Chicago, Ill.

BELIEVES MANUAL 1 IS SPLENDID INSTRUCTION

205 S. State St., Jerseyville, Ill.

Sirs:

About three weeks ago I received your Manual No. 1, have digested a great part of it and believe it splendid instruction.

Am enclosing my check for $5.00 for which please mail me the following: Manuals Nos. 2, 3, 4, and E-1.

C. A. POWELL

Fast Service on Cold Beverages

"One mile of cold beer," or 5,280 bottles, are kept in this specially designed cooler at the rear of a Dayton beer store. Shown are three of the four doors providing easy access to . . .

Beer on A Merry-Go-Round

. . . the four large turnstiles, each having certain brands of beer. This is a rear view and shows how the turnstiles can be replenished from the rear.

One Mile of Beer

Unique 'Turnstile' Cooler Racks Keep Maximum Number of Bottles Cooled

DAYTON, Ohio — "One mile of cold bottled beer" is the slogan used to attract thirsty customers to Kramer's Party Supply Co. here. The unique beer cooling system, which actually keeps 5,280 (or more) bottles of beer cold at all times, was designed and installed by the Refrigeration Service Shop, Inc., of which L. O. Warner is president. The firm handles Carrier refrigeration and air conditioning in this area.

To keep a large quantity of beer cold, and still have it accessible from the working space behind the store counter, four large turnstiles were built in a room 22 ft. by 12 ft., located immediately back of the main service counter. These turnstiles have a bank of revolving shelves, each providing space for a separate brand of beer.

Access to the turnstiles is gained through four refrigerator doors located in the insulated rear wall of the main store. Thus the clerk can open any one of the four doors to secure the brand of beverage requested, and the shelves can be replenished from the rear.

Cooling in the large "walk-in" beer cooler is provided by two suspended Carrier cold diffusers, powered by a 3-hp. compressor.

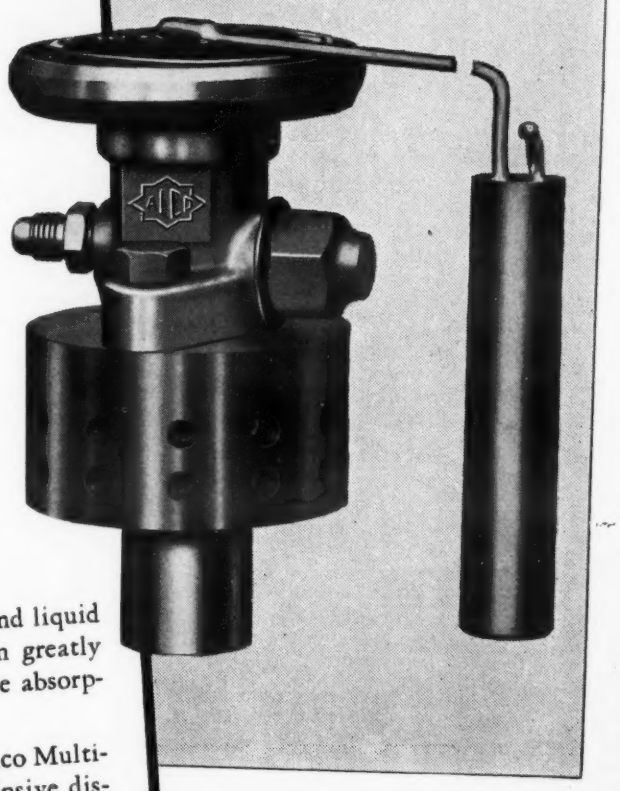
L. O. WARNER

Back pressure controls are used to maintain the proper temperature in the refrigerated room. Insulation is 4 inches of Palco wool on all walls, floor, and ceiling.

Mr. Warner reports that the system is proving entirely satisfactory to the owner, and that advertising "one mile of cold bottled beer" has proved to be an excellent trade stimulant for the store.

ALCO
Multi-Outlet Thermo Valves

ASSURE *Improved* EVAPORATOR PERFORMANCE



Rapidly growing recognition by the entire refrigeration industry proves the superior results obtained through the use of Alco Multi-Outlet Thermo Valves. A list of representative users includes the following outstanding companies:

American Car & Foundry Co.
Baker Ice Machine Co., Inc.
Baltimore Air Coil Co.
Bush Manufacturing Co.
Chrysler Corp. (Airtemp Div.)
Curtis Refrigerating Machine Co.
Fairbanks, Morse & Co.
Frick Co., Inc.
General Electric Co.
Governair Corp.
McQuay, Inc.
Marlo Coil Co.
Tropic Aire, Inc.
Westinghouse Electric & Manufacturing Co.
York Ice Machinery Corp.

With the Alco Multi-Outlet Thermo Valve, distribution of refrigerant takes place within the valve body, at the point of expansion and before separation of gas and liquid takes place. The resulting improvement in distribution greatly increases coil capacity, by utilizing more surface for the absorption of heat load.

Additional advantages include a saving in costs, as Alco Multi-Outlet Thermo Valves eliminate the necessity for expensive distribution headers or a multiplicity of small valves. There is no possibility of misapplication of controls in the field, a common source of trouble.

If you are interested in saving costs, in increasing distribution efficiencies and coil capacities, get all the facts about Alco's Multi-Outlet Thermo Valves. Alco engineers will gladly work with you in solving any problems in the field of refrigerant control. Write to Alco today.

Range of Sizes:
FREON
From ½ ton to 50 tons.
METHYL CHLORIDE
From 1 ton to 100 tons.
Two to 36 outlets, depending on capacity.

The purchasers of Alco Multi-Outlet Thermo Valves are assured of full protection against the infringement of any existing application patents.

ALCO VALVE COMPANY
2620 Big Bend Blvd. St. Louis, Missouri
New York • Chicago • San Francisco • Los Angeles • Seattle
Engineered Refrigerant Controls
THE STANDARD OF THE INDUSTRY

Southern Hill Outlet Is Reorganized

BIRMINGHAM, Ala. — The distributorship for C. V. Hill & Co. commercial refrigerators here, formerly known as Simpson & Bennett and later as Walter Simpson, Inc., has been reorganized in a three-way partnership between Walter L. Simpson, Roy E. Andrews, and Charles E. Wolfe. The latter two until recently were associated with the Hill organization in New Orleans.

Buffalo Forge To Ventilate New U. S. Battleships

BUFFALO — Buffalo Forge Co. will build the ventilating equipment for several new U. S. battleships, under terms of a $103,233 order from the Navy Department covering fans, ducts, and other types of accessories.

Milk Cooler Line Uses Hermetic Unit, 'Plates'

UTICA, N. Y.—Three complete lines of milk coolers — hermetic, standard duty, and heavy duty—designed to offer a type, a size, and a price for every dairy farm are being offered this year by Emil Steinhorst & Sons, Inc.

Standard feature with the hermetic and standard duty lines are new "no-coil" freezing plates.

These plates are ¼-inch thick and are constructed with embossed channels to direct the flow of refrigerant. The plates are set in the cooler cabinet in such a way as to permit free circulation of the chilled-water bath around both sides of the plates. An "ice bank" up to 75 pounds in weight can be built on these plates by simple adjustment of the visual temperature regulator down to its lowest setting, it is claimed.

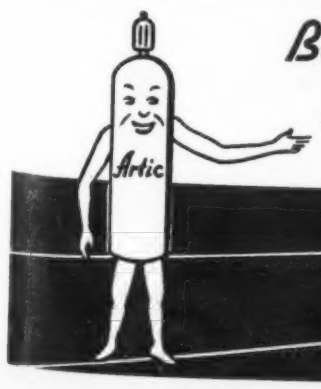
Defrosting feature of these plates is automatic. When the machine unit is operating ice will be formed on the plates; when the machine completes its cooling cycle and stops, the ice will drop off within a few hours, leaving the plates free.

The hermetically sealed refrigerating unit is comprised of a compact, twin-cylinder compressor and electric motor assembly sealed inside a steel dome.

A five-year warranty is offered on the compressor-motor assembly alone. A standard one-year warranty covers other parts of machine unit, cabinets, and freezing plates.

The standard duty models are expressly designed for those dairymen who prefer the conventional belt driven type of refrigerating machines. The "no coil" freezing plates come as standard equipment on these units, but conventional wrap-around copper cooling coils will be supplied without extra cost if desired.

Capacities in the hermetic line run from two to six 10-gallon cans; in the standard duty line from two to eight cans; and in the heavy-duty line from two to 16 cans.



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The Preferred Methyl Chloride for Service Work

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THE R. & H. CHEMICALS DEPARTMENT
E. I. DU PONT DE NEMOURS & CO. (INC.)
Wilmington, Delaware
or National Ammonia Division
Frankford P. O. Philadelphia, Pa.

Dat 'Ol Debbil' Moisture Again

How Types of Refrigerant Dryers Differ In the Way They Function

Editor's Note: The following is an extract of a talk given by R. L. Hockley of the Davison Chemical Co. before the Philadelphia section of the American Society of Refrigerating Engineers on the subject of "Moisture, Its Sources, Effects, and Control." It is another in the series of articles by men who have made a study of this serious problem in refrigeration servicing, which have been presented in AIR CONDITIONING & REFRIGERATION NEWS.

While moisture is not the most serious problem confronting the refrigeration industry it is a very annoying one and is potentially rather serious. I will attempt to deal with the sources of moisture, effects of moisture, and means of combating same. I might add that the following comments apply to all refrigerants except ammonia, with which moisture difficulties are practically non-existent.

In this discussion I shall refer to water in the form of gas as moisture and liquid water as water. In practically all untreated air, moisture in varying degree is present, therefore any space filled with air contains some moisture.

Use of torches burning acetylene gas introduces into refrigeration systems additional quantities of moisture which is one of the products of combustion. Also, very frequently soldering fluxes, etc. have an affinity for moisture. There is also the possibility that when assembling a system where parts are subjected to variations in temperature there may be an appreciable amount of water from condensation, some of which will be inside the system.

All solids, metallic or non-metallic, adsorb moisture in varying amounts on their surfaces. If porous or fibrous they absorb moisture on their internal surfaces as well. Particularly on hermetic units, or units in which motor windings, etc. are in direct contact with the refrigerant, appreciable quantities of moisture are introduced into the system through the moisture content of the windings. Two other moisture sources are: the refrigerant and the oil. In general, however, these latter are rather closely controlled. . . .

. . . Where appreciable quantities of moisture are present the most obvious result is the formation of ice at the point of expansion, retarding or completely stopping the circulation of the refrigerant. In the case of flooded systems the freeze-up may not restrict the flow of refrigerant, but appreciable quantities of emulsified oil may build up inside the evaporator and act as a heat insulator. The location of the freeze-up will vary depending upon the design of the unit, but in general it will occur at the point of maximum expansion.

Explanation for this is that practically all refrigerants have the ability to carry water in direct ratio to their temperature. In other words, the refrigerant at a high temperature has a much greater capacity for water than that same refrigerant at a low temperature. Therefore, the moisture is picked up in various parts of the system and carried to the point where the temperature of the refrigerant is dropped and the moisture precipitated out. If this temperature is below freezing, ice is formed.

HOW TO TELL A FREEZE-UP

The indications of a freeze-up are failure to maintain evaporator temperatures as a result of restriction or complete stoppage of the flow of refrigerant and frequent intermittent operation as the ice formed thaws, again permitting circulation. This difficulty with freeze-up will occur with practically all refrigerants except SO_2.

A second and much less obvious effect of moisture, generally in smaller quantities than referred to in regard to freeze-up, is the formation of appreciable amounts of sludge. Particularly in the case of SO_2 systems this sludge may be formed to such an extent that close tolerances in working parts may be completely closed and parts stuck. In other types of refrigerants this formation of sludge may be manifested by appreciable plugging of screens and increased back pressures even to a point where expansion may take place through screens or filters.

This sludge is generally formed because the reaction between water, refrigerant, and oil form heavy hydrocarbon molecules through oxidation. This sludge may have any number of different physical characteristics as you are undoubtedly aware. It may vary from a paste to a hard carbonaceous material, but in general the effects are about the same.

WHAT SLUDGE IS

A third result of moisture and one that undoubtedly contributes to the formation of sludge is the hydrolizing of the refrigerants to form acids. The formation of these acids will vary, in some refrigerants this reaction taking place very slowly while in others extremely rapidly. In the case of chlorinated hydrocarbon refrigerants the acid is generally hydrochloric. This acid works as we would expect all acids to work, attacking the various metals. It is because of this reaction that extreme care must be taken to remove all traces of moisture where appreciable quantities of aluminum are present, as for instance in evaporators, etc.

A fourth effect of moisture in the system is referred to generally as "copper plating." This is not a descriptive term but covers the precipitation of metallic copper on various parts of the unit. It has been fairly conclusively demonstrated that the reaction incidental to copper plating is dependent upon the presence of oil and moisture or some material other than refrigerant. The effect of "copper plating" is similar to that of sludge formation except that this copper seems to be precipitated on moving parts preferentially. If carried to extremes, this precipitation will cause compressors to stick. . . .

While the factory dehydrating technique should theoretically remove all traces of moisture, practically it has generally failed to do so. I have heard it said authoritatively that all of the moisture present in a system is not liberated so that it can be removed or cause trouble as the case may be for a period of at least six months from beginning of operation.

THE FACTORY CAN'T DO IT

We know that moisture trapped in oils and greases is extremely difficult to remove and where joints, connections, etc. are made, very minute quantities of moisture may be partially trapped to be liberated over a long period of time. Therefore we can say in general that from a practical production point of view it is impossible to entirely eliminate all moisture in a refrigeration system.

We do not, however, wish to have this statement misconstrued to mean that we are suggesting the discontinuance of dehydration operations. On the contrary, they have a definite function and without such an operation very excessive quantities of moisture would be left in the systems.

. . . We would suggest that where it is necessary to open up units in the field for servicing, every precaution be taken to localize the effect of this opening as much as possible. In other words, by means of closure of valves, isolate the section to be worked on so the contamination of the system is reduced to a minimum. It has been our observation that a thorough purging with dry refrigerant is of material benefit.

CAN'T GET AWAY FROM IT

We also believe and have observed in the field that where service operations are necessary, it is essential to provide some method of removing the last traces of moisture. In the case of leaks on the low side of a system, where the low side is below atmospheric pressure, it is most desirable to provide permanent means to take care of the moisture left in the system. Where liquid water is present it can only be carried to the means capable of coping with it by being dissolved in the refrigerant. This naturally involves considerable time before all of it is transported to the point where it is eliminated.

From the aforesaid it is obvious that in spite of the most meticulous care, it is extremely difficult to completely eliminate moisture in new units and practically impossible to eliminate it in units assembled in the field or serviced in the field. We will now discuss the means available for eliminating or neutralizing the effect of the moisture or water left in the system.

There are two general types available. Let us first consider the so-called "inhibitors." In general the purpose of these materials is to eliminate the effects of excessive moisture by combining with the moisture and thereby reducing the freezing point of the mixture below minimum evaporator temperatures. They accomplish this because the base of most of them is methyl alcohol or other organic anti-freeze compound. Most of them also include compounds aimed to reduce or neutralize the decomposition of the refrigerant and attendant acid formation.

They effectively eliminate freeze-ups but some of the other reactions are not desirable. It is generally conceded that methyl alcohol, with moisture present or not, promotes copper plating and also contributes toward the decomposition of the refrigerants and sludge formation.

DRY DRYER HELPS THE NEXT MAN

We believe that there is one point that might be brought out in regard to the use of these materials and that is the psychological effect on the service man. **Where a system is assembled with a dehydrator any person servicing the unit is well aware of the fact that this is the means the manufacturer or the last service man took to cope with moisture left in the system.**

Where no dehydrator is installed, however, there is always a question in the service man's mind as to whether or not there is an inhibitor present and if so what inhibitor is used. Some of these inhibiting agents are not all compatible and if one kind should be mixed with another some very unusual and sometimes definitely undesirable reactions take place. This cannot happen where dehydrators are used.

The second means of coping with moisture involves the installation of a dryer which is charged with a desiccating agent that is capable of removing the moisture from the refrigerant.

It might be well to give some consideration to the most desirable location of these dryers. It is possible to install them in either the low side or the high side.

WHICH SIDE—HIGH OR LOW?

In general, dryers installed in the low side operate at lower temperatures than those in the high side, but, the refrigerant is in the vapor phase, and therefore, moisture and other undesirable materials are present in a much smaller percentage by volume of the refrigerant. The other point against installation of dryers in the low side is the fact that so much greater volume of refrigerant has to be dealt with that in any practical dryer design lineal velocities through the dryer are very high.

Since the efficiency of dryers is largely dependent upon the period of contact between the refrigerant and the drying agent, high lineal velocity will have a tendency to reduce the efficiency. They also have a tendency to increase the resistance through the dryer. This is sometimes compensated for by using a coarser drying agent which again results in less surface exposed and shorter contact periods.

The disadvantages of dryer installation in the high side are, first, the dryer is called upon to operate at higher temperatures. This can be minimized by installing the dryer at the outlet of the condenser. In spite of changes in location, however, it is impossible to obtain as low temperatures as can be obtained in low side installations. This has a tendency to reduce drying efficiency. This should be compensated for by installing the proper size dryer.

OBJECTION ON HIGH SIDE

Second objection to the high side installation is that when a unit shuts down the expansion of the liquid refrigerant trapped in the dryer takes place with attendant heat loss and reduction of efficiency. In general, however, this is very slight and it is our feeling that the advantages of high side dryer installation much more than offset the disadvantages.

We are not in this discussion taking into consideration the various types of designs of dryers because it is our feeling that there is a wider latitude permissible here and there are many good designs available. Moreover, it is primarily the

(Concluded on Page 11, Column 1)

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Differences In Dehydrating Agents & the Way They Work In Refrigerating Systems

(Concluded from Page 10, Column 5)

desiccant which determines the efficiency of moisture removal. Therefore, let us review the various materials that are available for this purpose.

The available desiccants may be divided into two general groups. Let us discuss first the chemical dehydrating agents. By chemical dehydrating agents I refer to that group consisting of materials such as calcium and other basic oxides, calcium chloride, and anhydrous calcium sulfate among others. These materials, particularly the basic oxides react only with moisture to form hydroxides.

IN ONE, ACTION IS CHEMICAL

This action is definitely a chemical one. Material such as solid calcium chloride and anhydrous calcium sulfate react only with moisture to form hydrates or in other words to increase their water of crystallization. This similarly must be rated as a chemical reaction. Since a chemical reaction involves a change of the chemical composition it generally follows that the physical structure of the material also changes. Such a change of physical structure is generally accompanied by liberation of some minute quantities of dust due to volume changes that take place.

Also, some of these materials, particularly some of those forming hydrates are deliquescent, that is, will take up moisture to a point where the entire mass will liquify. This is obviously a very serious matter as it is impossible to retain the liquid in the dehydrator. Also, one or two of these materials are corrosive particularly when in the liquid phase.

A corollary disadvantage that follows the volume change mentioned above is a definite tendency of the material to disintegrate which results in increased flow resistance through the dehydrator. Let us again emphasize the fact that these chemical agents act only on the moisture, and where moisture has been present for some time as we pointed out in the beginning, there may be many other equally undesirable compounds present such as acids, etc.

Of course, the basic oxides will react with the acids to neutralize them, but this results in salt formation and further undesirable quantities of moisture being released into the system. Therefore, because of first, undesirable physical characteristics, and second, the fact that these agents act on moisture alone, it makes their use undesirable particularly on service applications.

PHYSICAL MEANS OF DRYING

In the second group of materials suitable for charging dehydrators, we have those materials which take up moisture and other undesirable compounds primarily through physical means. In this group are such materials as aluminum trioxide and dried colloidal silicon dioxide. In the case of the former, while its action is largely physical there is some indication that some chemical reaction takes place also. In the case of the latter material the action, so far as is known, is entirely physical.

Some explanation as to this action by physical means alone might be in order and from here on let us confine our discussion to that agent whose action is purely physical, namely, dried colloidal silicon dioxide which is recognized by the trade as Silica Gel. This method of taking up moisture by physical means is explained by the phenomenon of adsorption.

It is well known that all materials have the ability to adsorb on their surface varying amounts of condensible gases; therefore, a material having extensive surfaces will adsorb appreciably more condensible gases than one whose surface is limited.

Silica Gel, which is composed of a myriad of ultra-microscopic pores smaller than even the wave length of light, has a pore surface in excess of 50,000 square feet for each cubic inch of granular material. This enormous surface gives it the ability to take up more than 40% of its weight in water in saturated atmospheres.

NO CHANGE IN VOLUME

Because the action is entirely physical there is no change in volume of the material as moisture is adsorbed. Even when saturated, Silica Gel looks and feels perfectly dry. Again because the action of adsorption is purely physical there is no erosion or dust.

In general, Silica Gel becomes completely saturated with the refrigerant and because it has a preference for inorganic compounds over organic compounds, the refrigerant or oil is replaced by moisture or acids passed through the Silica Gel charged dehydrator. This action of replacement of the refrigerant and oil by moisture or other undesirable compounds is practically instantaneous. On one pass through active Silica Gel the undesirable compounds are removed.

There is one other point which is usually raised during discussions of Silica Gel and that is the question as to its abrasiveness. We all are familiar with the abrasive characteristics of sand and because Silica Gel has approximately the same chemical composition of sand, considerable fear is generally expressed about its possible abrasive effect.

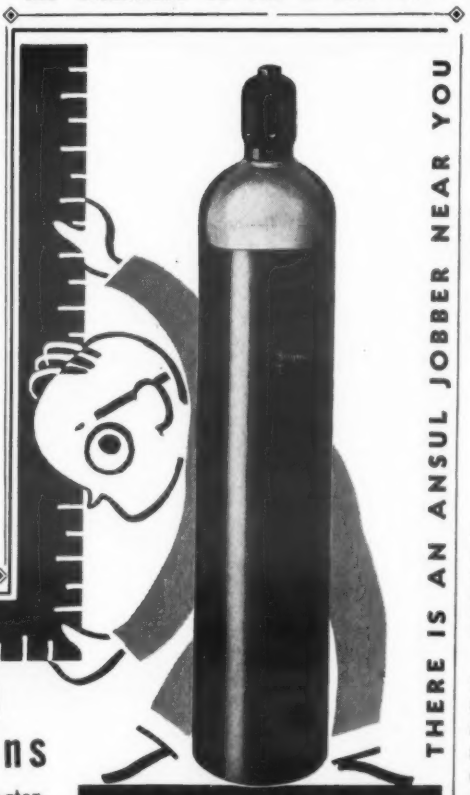
ABRASIVE EFFECT DENIED

This is definitely a misconception as sand is a crystalline form of Silica. Silica Gel on the other hand is a dried colloidal form and, therefore, is not to be confused in its abrasive characteristics with sand.

One of the large compressor manufacturers demonstrated this point to his own satisfaction. Two new compressors were carefully inspected as to bearing surface, cylinder walls, etc. and put in operation under full load conditions. In the crankcase of one a half teacupful of granular Silica Gel was intentionally added. These compressors were run for 90 days under full load conditions, after which time they were both completely dismantled and reinspected.

There was not the slightest difference in the condition of the compressor in which Silica Gel had been added and the condition of the other compressor. Naturally the Silica Gel had been completely broken up due to shock from connecting rods, bearings, etc., but there were no scores in the cylinder walls or other indication of any damage whatsoever. I am not familiar with similar tests having been run on other materials.

I have attempted to outline the advantages and disadvantages of each of the various types of desiccating agents. It is our feeling that of all of the materials available the physical agents, and more particularly Silica Gel, have considerable advantage over any other materials used to cope with moisture.



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Agents for Kinetic's 'Freon-12'

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G-E To Reopen Tauton Motor Plant To Make Plastics

TAUNTON, Mass.—Reopening and renovation of General Electric's former motor plant here for the manufacture of plastic molded parts will make it one of the largest of its kind in the country and increase the number of G-E plastics plants to five. The plant is expected to be in operation in four months.

Tremendous requirements for plastics in the United States defense program, the consequent replacement of non-ferrous metals with plastics, and the natural growth of the plastics industry were given by G-E officials as reasons for expansion of the plastics department's facilities.

In the Taunton plant, G-E will install nearly 300 molding presses of the compression type, more than half the capacity of the main factory in Pittsfield, Mass., the largest plastics molding plant in the United States. Approximately 400 persons will be employed.

The Taunton plant, formerly used for the manufacture of induction motors, and idle since 1920, comprises 88,000 sq. ft. of floor space. It is a one-story structure ideally suited for plastics manufacture.

In addition to its Pittsfield plant, the General Electric plastics department also operates factories in Lynn, Mass., Meriden, Conn., and Fort Wayne, Ind.

Reynolds Metal To Build New Aluminum Plant

PORTLAND, Ore. — Construction of an aluminum plant in this territory by Reynolds Metal Co. with an initial capacity of 40,000,000 lbs. of aluminum a year is scheduled to start immediately. Production of pig aluminum is planned for June 15, with the company planning to expand eventually to the manufacture of finished products.

The company has signed a 20-year contract with Bonneville Power Administration for delivery of 40,000 kilowatts of hydroelectric power.

Aluminum Corp. of America is already operating a plant at Vancouver, Wash.

Fulton Sylphon Publishes Engineering Bulletin

KNOXVILLE, Tenn.—Engineering Bulletin No. 825, describing several types of shaft seals and discussing the use of seals in general, has been published by Fulton Sylphon Co. here.

The bulletin first describes in detail the principal parts of a seal and then gives specifications on stationary and rotary type seals, in addition to dimensions, operating characteristics, and instructions for ordering.

The seals shown are for pressures up to 200 lbs. per square inch and for shaft sizes from ½ inch up. These seals are ordinarily used on shafts running at speeds of 300 to 400 r.p.m., but have been used successfully on much higher speeds, according to the bulletin.

In all, 27 different sizes of stationary seals and five rotary seals are described.

The Service Man's Notebook

By Henry Kronke

HEAT LEAK ONLY—B.t.u. per Dry per Sq. Ft. Outside Refrigerator Surface

Temp. Diff.	Corkboard Insulation or Equivalent 2"	2½"	3"	3½"	4"	4½"	5"	5½"	6"
1°	3.0	2.688	2.4	2.184	1.99	1.848	1.728	1.608	1.512
20°	60.0	53.76	48.0	43.7	39.8	36.9	34.56	32.16	30.2
30°	90.0	80.6	72.0	65.5	59.8	55.4	51.84	48.24	45.4
40°	120.0	107.5	96.0	87.4	79.7	73.9	69.12	64.32	60.5
50°	150.0	134.4	120.0	109.2	99.6	92.4	86.4	80.4	75.6
60°	180.0	161.3	144.0	131.0	119.5	110.9	103.7	96.4	90.7
70°	210.0	188.2	168.0	152.9	139.4	129.4	120.9	112.6	105.8
80°	240.0	215.1	192.0	174.7	159.4	147.8	138.2	128.6	120.9
90°	270.0	241.9	216.0	196.5	179.3	166.3	155.5	144.7	136.1
100°	300.0	268.8	240.0	218.4	199.2	184.8	172.8	160.8	151.2
110°	330.0	295.7	264.0	240.2	219.1	203.3	190.1	176.9	166.3

In the above table, giving heat leak through walls with corkboard insulation, the following transmission factors have been used in determining B.t.u. per hour per sq. ft. per degree F.: 2 inches of insulation—0.125; 2½ inches—0.112; 3 inches—0.100; 3½ inches—0.091; 4 inches—0.083; 4½ inches—0.077; 5 inches—0.072; 5½ inches—0.067; 6 inches—0.063.

HEAT LEAK ONLY FOR STANDARD ICE CREAM CABINETS
B.t.u. per Day

Type of Cabinet	Temperature Diff. Between Room and Cab. Sleeves 70° F.	80° F.	90° F.	100° F.	110° F.
2 Hole, Single Row	4,158	4,752	5,346	5,940	6,534
3 Hole, Single Row	5,425	6,200	6,975	7,750	8,525
4 Hole, Single Row	6,685	7,640	8,595	9,550	10,505
6 Hole, Single Row	9,205	10,520	11,835	13,150	14,465
4 Hole, Double Row	5,677	6,488	7,299	8,110	8,921
6 Hole, Double Row	7,434	8,496	9,538	10,620	11,682
8 Hole, Double Row	8,960	10,240	11,520	12,800	14,080
10 Hole, Double Row	10,710	12,240	13,770	15,300	16,830
12 Hole, Double Row	12,250	14,000	15,750	17,500	19,250

This data actually applies to brine cabinets only. However, since the outside dimensions and amount of insulation are about the same for all types of ice cream cabinets, this table may be used with sufficient accuracy for both types.

"A Pot of Coffee for 814"

THREE O'CLOCK in the morning, but in his hotel room the Bundy sales engineer is still buried in blueprints and specifications. Six hours from now he must tell his customer how Bundy tubing can best be engineered into a new production job.

The customer may be a sewing machine company in Rochester, or a manufacturer of oil drilling equipment down in Texas. No matter what the product, the customer's problem is Bundy's problem — a problem of delivering not just so many feet of tubing, but complete, finished parts—bent, flattened or coiled, with fittings included—ready for assembly into a finished product.

Many large manufacturers, with production running into hundreds of thousands of units, not only specify Bundy tubing as standard, but lay the whole responsibility for *every* tubing problem right in Bundy's lap. Every day Bundy engineers are developing new uses in new fields — including applications where solid rods have formerly been used.

If you use tubing in volume production (in sizes near the range shown below), Bundy will be glad to give you the advice of its engineering department, or to take the tubing part of your product design right off your hands. Address — Bundy Tubing Company, Detroit.

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BUNDYWELD double-walled steel tubing, hydrogen-brazed, copper-coated inside and outside. From Capillary sizes up to and including ⅛" O.D. This double-walled type also available in steel, tin-coated outside and in Monel.

BUNDY ELECTRIC WELD steel tubing. Single-walled —butt welded—annealed. Furnished tin-coated outside if desired. Sizes up to and including ⅝" O.D.

BUNDY "TRIPLE-PURPOSE" MONEL tubing. Double-walled, rolled from two strips, joints opposite, welded into a solid wall. Available in all Monel, Monel inside—steel outside, and Monel outside — steel inside. Sizes up to and including ⅝" O.D.

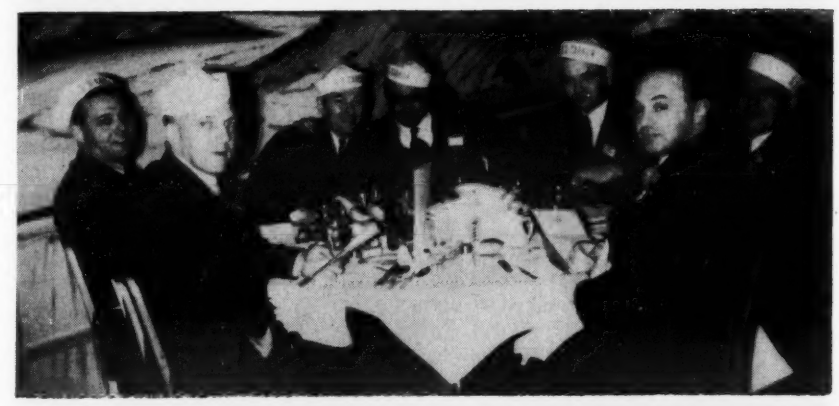
Camera Highlights of the News In Refrigeration & Air Conditioning

FIRST PRIZE in Class B of the recent National Washer-Ironer Week display contest meant an extra payoff from Westinghouse of $200 to Van Dervoort Hardware Co., Lansing, Mich. Here T. A. Van Dervoort (third from left) receives the check from O. I. Alverson of Westinghouse as Boyd Shepler, Wesco Detroit merchandise manager, and Lloyd White, Van Dervoort appliance manager, look on.

ON THE GOOD SHIP CARRIER. (At right, above): Hugh Martin, Martin Engineering Co., Toledo, Ohio; L. L. Barnes, Carrier-Atlanta Co., Atlanta; W. T. Clark and T. J. Bondurant of Knoxville, and Carson Herrell enjoy the banquet at the recent Carrier convention in Syracuse, N. Y.

(Center): Stan Ellison, Carrier commercial manager, and Charles Dallas Reach of Carrier's advertising agency (center) have a "big time" with visiting dealers.

(Below): L. G. Powers of Carrier's Cleveland office chats with Art Boot of Boot & Co., Grand Rapids, Mich.



SIXTH ANNIVERSARY PARTY given by United Refrigeration Service Co., Columbus, Ohio, attracted 173 refrigeration men from all over central Ohio, who enjoyed a buffet lunch and beer and spent the evening playing various card games. The service firm's shop was converted into a "club room" for the affair.

MUSIC IN THE SHOP helped enliven the United Refrigeration Service party. Study of this and the preceding photo will reveal such industry figures as E. E. Graff and R. A. Dunlop, Ranco; Ed Mason, Refrigeration Electric Supply Co.; A. Chadburn, Jr., Williams & Co., and others.

OBERC OPENS WEST SIDE BRANCH. J. M. Oberc, Detroit jobber, with Lou Wallace, east side branch manager, and Reo Parent, who will manage the new branch store recently opened by the company at 12172 Grand River Ave.

so...why advertise?

You hope your prospects will keep on wanting your product, even if they have to use a substitute now, don't you?

You want to develop an ever-increasing demand for your product to build markets that will absorb your capacity after we return to normal times, don't you?

In a time of high personnel turnover you want all newcomers to learn about your product, don't you?

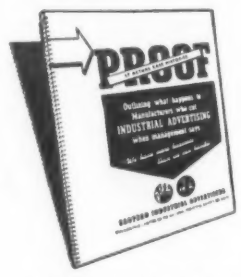
So keep right on selling your product as hard as you can, and then, in each ad, explain what your situation is, and what you're doing to speed production and to handle all orders, large or small, on a fair and equitable basis.

On top of that, keep in mind that advertising can do many useful things besides building sales volume. See what you can do, through advertising, to take some of the load off of your service department, or to ease the difficult "customer-relations" problem of your sales department. Analyze your line. Maybe there's an item that's not sold out . . . or perhaps some "orphan" item that has never gotten the promotional break you have hoped to give it some day.

Above all, don't ever fall back upon just "keeping your name before the trade." Keep on selling your product . . . keep on giving your business paper advertising an *important* job to do.

And it *is* important, in these crucial times, to promote industrial efficiency in America! Quoting from Industrial Marketing magazine "We have got to help, each of us, in his small way, to build, duplicate, and surpass that great 'secret weapon' of the invader: *industrial efficiency*."

That goes for the efficiency of selling, too. Remember the "obsolescence of salesmanship" following the last war? Good salesmen became order-takers and never got over it.



The sad plight of seventeen companies that got soft in their selling and quit their advertising is graphically recorded in a fascinating booklet called "Proof" which was compiled by the Philadelphia Chapter of The National Industrial Advertisers Association. The better your business is—the higher your stack of unfilled orders—the more you owe it to yourself to read this booklet once a month. It's yours at cost—$1.00.

THE ASSOCIATED BUSINESS PAPERS 369 Lexington Ave., N.Y.C., CAledonia 5-4755

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Operating and Service Methods For Dry-Expansion Counter Freezers

By Arch Black and Dean C. Seitz

Editor's Note: This article continues the information started last week on Tuthill 2½ and 5-gallon counter-type ice cream freezers, and is one of a series of articles on the servicing of counter freezers which have been appearing in issues of AIR CONDITIONING & REFRIGERATION NEWS in the past several months.

The whole series will cover the servicing of various types of low temperature mechanical refrigeration equipment used in the food retailing business.

Tuthill Freezers (Cont.)

WATER REGULATOR

The water regulator is connected by a capillary tube to the high pressure side of the system and the operation of the regulator is controlled by the pressure of this side of the system. It should be adjusted to pass sufficient water to maintain approximately 20° F. rise in the temperature of the water while passing through the condenser coil of the compressor.

In order to check the temperature rise of the water, the temperature of the water entering the compressor may be determined by opening a faucet near the machine and after it has run for a few minutes check the temperature of this water with the thermometer.

Allow the machine to run 5 to 10 minutes, then put the thermometer in the discharge water where it goes to the sewer. This temperature of the water should be 20° F. higher than that at the faucet. If it isn't, the adjustment at the center of the water valve can be used to increase or restrict the flow to obtain the required temperature rise.

Before any adjustment is made in the water valve setting of the machine, however, compressor head pressure should be checked. When the water valve is properly adjusted, the flow of water should stop about 2 or 3 minutes after compressor stops.

When the prevailing water pressure is greater than 100 lbs. per square inch, it will be necessary to procure from the factory a replacement spring to be applied in the water valve; and when this spring is requested, the request should state that it is for pressures above 100 lbs.

In some cases the water regulator may chatter, but it does not always mean that the valve is faulty, but usually is due to a local condition. This condition can easily be remedied to some extent and in many cases entirely eliminated by introducing an air pocket in the water line just ahead of the water regulator.

This may be done by substituting a tee just ahead of the water strainer which accompanies each Tuthill freezer equipped with water-cooled units with one leg of the tee pointing upward and having connected to it a piece of 1-inch pipe 1 foot long with a pipe cap coming up around it. Such an arrangement of piping will provide the necessary air dome.

HARDENING CABINET

Every Tuthill freezer cabinet is filled with a sufficient quantity of holdover solution when it leaves the factory. This holdover solution should not require any attention and at no time should it be exposed to an open flame.

The hardening cabinet, similar to others mentioned, is designed for hardening ice cream and the storage of mix. It is not suitable for dispensing ice cream from cans because the temperature is kept between 15 and 20° F. below zero, which, of course, is much too cold for dispensing purposes.

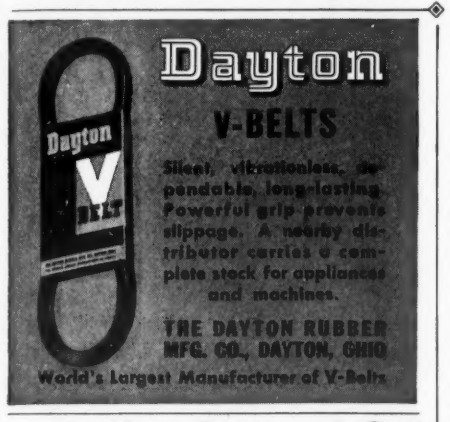
When there is room in the soda fountain or dispensing cabinet, the hardened ice cream may be transferred to it, where the higher temperature will allow it to soften to the point best suited for dispensing.

Scrape the frost from the hardening compartment occasionally with brush or dull knife. Too much frost delays the hardening. Do not stack packages higher than within 6 inches of the top of the cabinet which is about 2 inches below the holdover solution line. Otherwise the cream in upper packages will harden slowly and become icy.

Should trouble develop in the system which would result in too moderate a temperature in the hardening cabinet, dry ice may be used conveniently for holding the required temperature until the trouble is corrected. This, of course, would apply to any hardening cabinet.

Dallas Chapter To Collect Scrap Copper For Funds

DALLAS, Tex.—Members of the Lone Star chapter of Refrigeration Service Engineers Society here shortly will launch a plan for collection of scrap copper from members as a source of revenue for the chapter treasury. This plan was under considerable discussion at a recent meeting of the group, and received favorable comment.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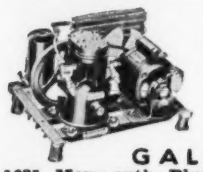

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PATENTS

Editor's Note: Because many readers have expressed the desire to again see reports of the latest patents issued on air conditioning and refrigeration inventions, the NEWS this week resumes that feature. It will appear every two weeks.

Drawings are numbered with the patent number itself, permitting identification by reference to the description of the patent.

Issued In January 1941

2,227,477. PACKAGE DISPENSING MEANS. Sydney W. Williamson, Dayton, Ohio, assignor to Ice Cream Dispensing Corp., New York, N. Y., a corporation of Delaware. Application Dec. 17, 1936, Serial No. 116,294. 23 Claims. (Cl. 62—89.)

11. In a cabinet for dispensing packages refrigerated to a point below the freezing point of water, means for refrigerating the cabinet, and a frost localizer comprising a cup mounted in the cabinet with its interior exposed to the air in the cabinet and with its bottom in thermally conductive relation with said refrigerating means.

2,227,537. REFRIGERATING APPARATUS. Don E. Dasher, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Aug. 19, 1938, Serial No. 225,763. 10 Claims. (Cl. 138—46.)

9. A restrictor formed of superposed secured together sheet metal members, a portion of one of said sheet metal members being directed outwardly away from a portion of the other sheet metal member to provide walls of a continuously open passage between the members having a predetermined cross-sectional area, said sheet metal members being so secured together and arranged with respect to one another that said portion of one of said members is movable in response to certain conditions relative to said portion of the other of said members to change the cross-sectional area of the passage.

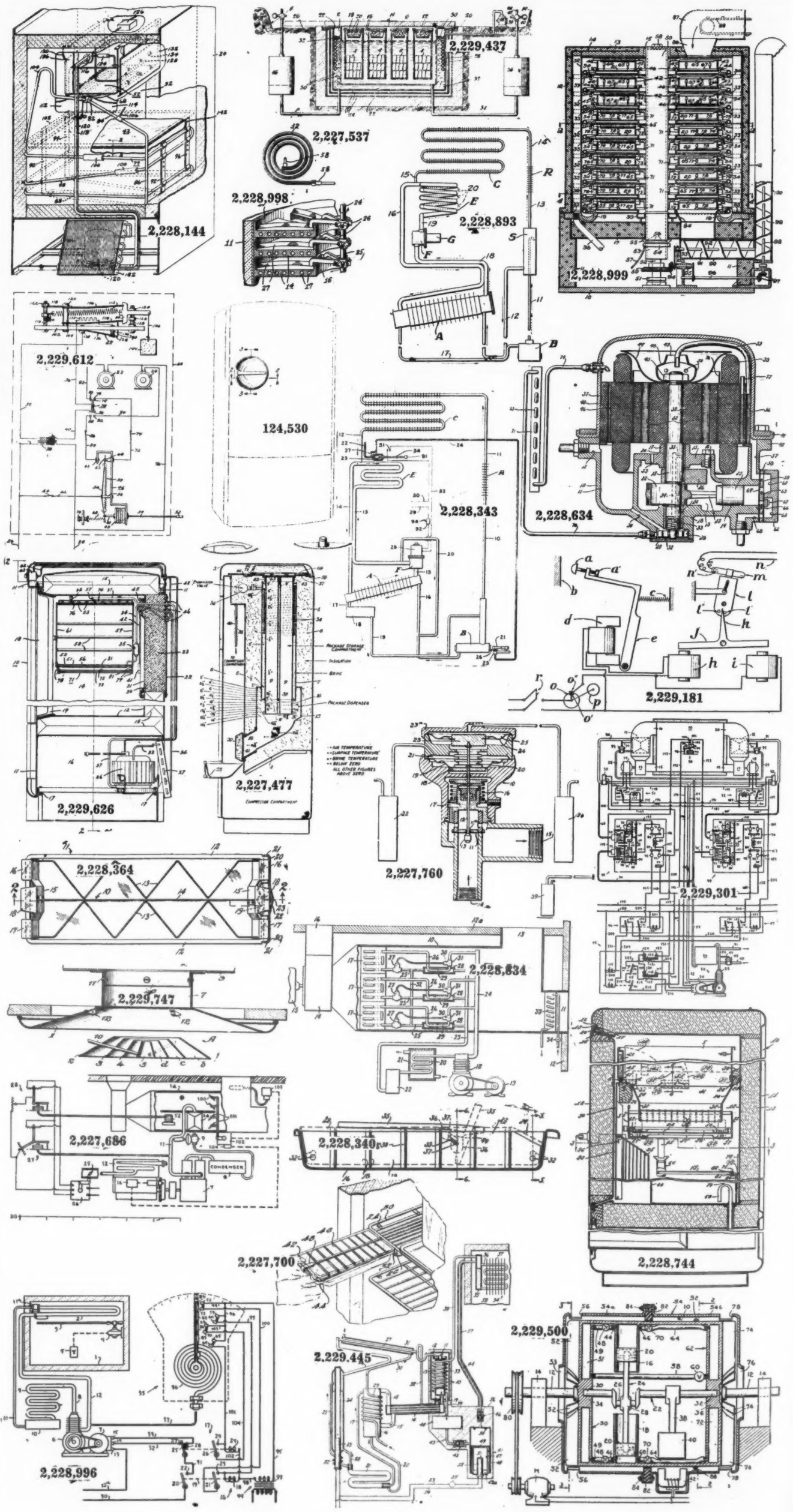
2,227,686. AIR CONDITIONING. Robert A. Wittmann, Chicago, Ill., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Aug. 5, 1939, Serial No. 288,615. 2 Claims. (Cl. 62—6.)

1. In an air conditioning system, in combination, a direct expansion cooling coil, means for passing air over said cooling coil and discharging it into a space being conditioned, a compressor connected to said cooling coil, a variable speed prime mover for driving said compressor, means responsive to a condition of the air in said space which is affected by said cooling coil for controlling the effect of said cooling coil upon the air in said space for thereby maintaining said space condition at the desired value, a speed controller for said prime mover, control means for said speed controller including a device influenced by the temperature of said cooling coil for varying the speed of said prime mover in a manner for maintaining the temperature of said cooling coil constant, adjusting means for adjusting the temperature of said cooling coil maintained by said control means, and means located in the air discharged from said cooling coil and influenced by the heat content thereof for actuating said adjusting means in a manner to raise the temperature of the cooling coil upon decrease in said heat content and vice versa.

2,227,700. ICE CUBE RELEASE. John C. Buchanan, Ypsilanti, Mich., assignor to Borg-Warner Corp., Chicago, Ill., a corporation of Illinois. Application April 27, 1939, Serial No. 270,321. 4 Claims. (Cl. 62—1.)

1. In a refrigerator compartment having an evaporator, a shelf supported beneath said evaporator comprising a lower frame member carrying supporting rods and having a portion thereof adapted to support a cold storage pan, and an upper frame member arranged to support a drip collector immediately over said cold storage pan, spacer members connecting said frame members and maintaining them in spaced generally parallel relation, said spacer members being of such a length that the space between said frame members will receive and the frame members will hold one end of an ice freezing tray while said tray is being twisted for loosening the ice cubes therefrom.

(Concluded on Page 15, Column 1)



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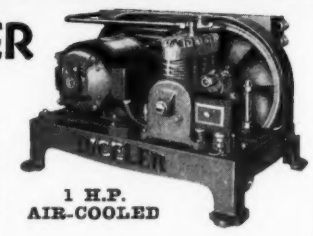

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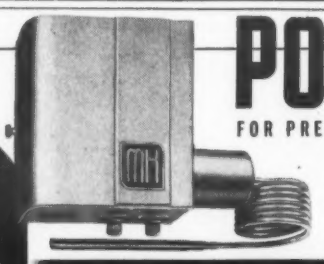

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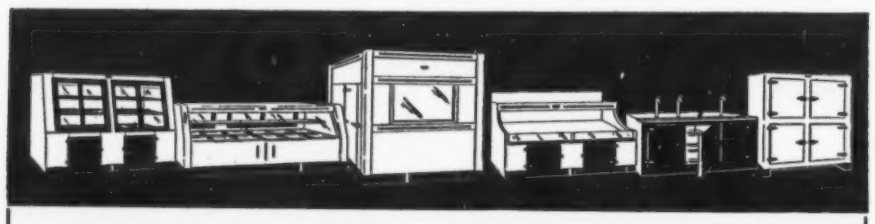

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Patents (Cont.)

(Concluded from Page 14, Column 5)

2,227,760. SYSTEM OF REFRIGERATION AND VALVE THEREFOR. Kenneth M. Newcum, Port Washington, N. Y. Application Aug. 3, 1937, Serial No. 157,087. 10 Claims. (Cl. 62—3.)

1. A refrigeration system having a cooling element, means for circulating a refrigerant therethrough, a throttling valve connected to said element to regulate the flow of refrigerant therethrough, and thermostatic means connected to said valve to control the same including two thermostatic elements, one of which is subject to the temperature changes in a space to be refrigerated, the remaining thermostat being located outside said space and independent of temperature changes in said space, and adapted to increase the opening of said valve upon a rise in temperature outside said space.

2,228,144. REFRIGERATING APPARATUS. Ralph K. Miller, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Aug. 13, 1938, Serial No. 224,786. 11 Claims. (Cl. 62—89.)

1. Refrigerating apparatus including a cabinet provided with a metal inner liner member, a refrigerant evaporating means entirely within said inner liner member, a portion of said inner liner member being provided with means forming a secondary refrigerant circuit, said means forming a secondary refrigerant circuit having a closed metal walled containing portion extending forwardly from the rear wall of the inner liner member, means for clamping said metal walled containing portion to a portion of the surface of the evaporating means, and a movable partition within said inner liner separating the evaporating means and the adjacent interior of the inner liner from the interior of said portion of said inner liner provided with the secondary circuit.

124,530. DESIGN FOR A REFRIGERATOR CABINET. Richard B. Janes and Earle E. Nofzinger, Greenville, Mich., assignors to Gibson Electric Refrigerator Corp., Greenville, Mich., a corporation of Michigan. Application June 27, 1940, Serial No. 93,291. Term of patent 7 years.

2,228,340. REFRIGERATING APPARATUS. Clifford R. Carney, Miami, Fla., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Sept. 21, 1938, Serial No. 230,943. 1 Claim. (Cl. 62—108.5.)

In a freezing apparatus for liquids, the combination of a tray for making ice cubes, a grid including two sections within the tray and adapted to form a plurality of ice cube molds, and a single handle associated with said sections and being arranged to simultaneously apply a downward force against one section and an upward force against the other section and later an upward force against the first named section and a downward force against the second named section.

2,228,343. CONTROL FOR REFRIGERATING SYSTEMS. Curtis C. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application June 16, 1937, Serial No. 148,424. 26 Claims. (Cl. 62—5.)

1. The method of maintaining a space to be refrigerated between predetermined lower and upper temperature limits which comprises the steps of generating a refrigerant vapor from solution, liquefying the vapor so generated, evaporating the liquid refrigerant in the presence of an inert gas to produce refrigeration, absorbing the refrigerant vapor from the inert gas, circulating the inert gas by power means, circulating the absorption solution by introducing inert gas thereinto until the temperature of the space to be refrigerated reaches said lower predetermined temperature limit, and then discontinuing the generation of vapor and circulation of inert gas and absorption solution until the temperature of the space to be refrigerated reaches said predetermined upper temperature limit.

2,228,364. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application April 25, 1939, Serial No. 269,996. 4 Claims. (Cl. 230—58.)

1. In a refrigerating apparatus a casting having a low pressure refrigerant and oil chamber and a compressor chamber, a compressor mounted in said compressor chamber, a motor for said compressor, a casing for enclosing said motor and connected to said casting, a drive shaft for said motor and compressor, said casting having a low pressure inlet and high pressure outlet for the refrigerant, said motor causing separation of entrained lubricant from the low pressure refrigerant by centrifugal action as the refrigerant passes through said motor.

2,228,634. ICE TRAY. Alvar Lenning, Stockholm, Sweden, assignor, by mesne assignments, to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Feb. 23, 1937, Serial No. 127,002. In Germany March 6, 1936. 12 Claims. (Cl. 62—108.5.)

1. Apparatus for producing ice pieces comprising a tray body adapted to hold water to be frozen and having resilient bottom and side walls, one of said side walls being deformable.

2,228,744. REFRIGERATOR. Charles F. Belshaw, Greenville, Mich. Application March 2, 1939, Serial No. 259,337. 8 Claims. (Cl. 62—31.)

1. A refrigerator, comprising a main shell divided into a refrigerant chamber and a refrigerating chamber by a partially open-bottomed hopper-like structure, comprising, intermediate its height, inwardly and downwardly inclined imperforate walls forming a closed figure in horizontal plane and freely swept externally by air currents, and a ridged heat-transmitting teeter board extended across the mouth of the hopper having substantial transverse extent and its entire under transverse surface freely swept by air currents.

2,228,834. REFRIGERATING SYSTEM. Andrew W. Kramer, Jr., Nutley, N. J., assignor to General Electric Co., a corporation of New York. Application Jan. 13, 1940, Serial No. 313,715. 5 Claims. (Cl. 62—8.)

1. A refrigerating system including a plurality of evaporator elements, each of said elements having an inlet conduit for admitting liquid refrigerant thereto and an outlet conduit for conducting vaporized refrigerant therefrom, an inlet connection for conveying refrigerant to said inlet conduits, an outlet connection for collecting refrigerant from said outlet conduits, each of said evaporating elements having portions of its respective ones of said inlet and outlet conduits arranged in heat exchange relation.

2,228,893. REFRIGERATION. Curtis C. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application Sept. 14, 1937, Serial No. 163,831. 10 Claims. (Cl. 62—119.5.)

2,228,996. REFRIGERATION CONTROL APPARATUS. William L. McGrath, St. Paul, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application April 14, 1939, Serial No. 267,807. 6 Claims. (Cl. 62—4.)

1. In a refrigeration system, in combination, variable capacity actuating means for said system, a movable device positioned in accordance with pressure within said refrigeration system which tends to vary upon variations in the load on the system, control means associated with said actuating means for varying the capacity of said actuating means in steps.

2,228,998. REFRIGERATING APPARATUS. Clarence Birdseye, Gloucester, Mass., assignor to Mechanical Research, Inc., Providence, R. I., a corporation of Rhode Island. Application July 25, 1938, Serial No. 221,041. 13 Claims. (Cl. 62—99.)

4. Freezing apparatus including in its structure an upright closed casing having a series of stationary circular refrigerated shelves therein, means for delivering to an upper shelf a product to be frozen, and means acting to move the product in substantially circular paths.

2,228,999. ART OF FREEZING FOOD PRODUCTS. Clarence Birdseye, Gloucester, Mass., assignor to Mechanical Research, Inc., Providence, R. I., a corporation of Rhode Island. Application March 8, 1939, Serial No. 260,573. 31 Claims. (Cl. 62—173.)

1.A process of freezing food products which consists in spreading the product on a flat heat-conductive refrigerated plate.

2,229,181. DEFROSTER FOR REFRIGERATING SYSTEMS. Frank T. Leilich, Baltimore, Md., assignor to James M. C. Speirs and Irvin Pool, both of Lansdale, Pa. Application April 20, 1937, Serial No. 137,945. 1 Claim. (Cl. 62—4.)

A defrosting device for refrigerating systems including a refrigeration circuit comprising the evaporator, compressor, motor and motor control switch, a refrigerating element, an electrical magnet associated with said element, a feeler movable towards and away from said refrigerating element and controlled by said electrical magnet.

2,229,301. REFRIGERATION CONTROL SYSTEM. Alwin B. Newton, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Oct. 27, 1939, Serial No. 301,606. 22 Claims. (Cl. 62—4.)

18. In a control system for a refrigerating apparatus having evaporator means, a compressor for circulating refrigerant through the evaporator means and a multispeed motor for operating the compressor, the combination of, means for completing a low speed circuit to the compressor motor for operating the compressor at low speed, means for completing a high speed circuit to the compressor motor for operating the compressor at high speed, means including overload cutout means responsive to the current flow in the low speed circuit and the high speed circuit for stopping the compressor motor when an overload condition occurs in either circuit, and means for preventing restarting of the compressor motor until the pressure on the low pressure side of the refrigerating apparatus increases to a predetermined high value.

2,229,437. MEANS FOR PRESERVATION OF LOW TEMPERATURE REFRIGERANTS. Wilfred T. Birdsall, deceased, late of Montclair, N. J., by Alvin C. Birdsall, administrator, Washington, D. C., assignor to Mergenthaler Linotype Co., Brooklyn, N. Y., a corporation of New York. Application Nov. 4, 1937, Serial No. 172,713. 7 Claims. (Cl. 62—91.5.)

1. Apparatus for storing material which has a vapor pressure higher than atmospheric pressure at atmospheric temperatures, comprising a chamber containing a liquid forming an envelope enclosing the material to be stored.

2,229,445. REFRIGERATION. Edmund A. Penander, Yonkers, and Dudley E. Heath, New York, N. Y., assignors to Servel, Inc., New York, N. Y., a corporation of Delaware. Application March 4, 1938, Serial No. 193,824. 13 Claims. (Cl. 62—5.)

1. Refrigeration apparatus including a heat receiving part and a cooling element, a secondary heat transfer circuit including an evaporator and a condenser below said evaporator and in heat exchange relation with said cooling element.

2,229,500. REFRIGERATION SYSTEM AND APPARATUS. Bertram J. Goldsmith, Neshanic, N. J. Application Dec. 21, 1938, Serial No. 247,007. 6 Claims. (Cl. 62—115.)

1. A refrigerator or cooler comprising a rotary fluid-tight casing, a compressor for the refrigerant comprising a compressor cylinder rotatable with said casing and positioned therein and a piston movable within and rotatable with said cylinder, a crank shaft within said casing.

2,229,612. REFRIGERATING APPARATUS. George C. Pearce, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application April 28, 1938, Serial No. 204,796. 16 Claims. (Cl. 236—44.)

16. A thermostatic control comprising a resilient bimetal strip, means for supporting said strip in cantilever fashion including stationary anchorage means for immovably anchoring one portion of said strip.

2,229,626. REFRIGERATING APPARATUS. Edward B. Newill, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application April 18, 1939, Serial No. 268,544. 5 Claims. (Cl. 62—125.)

1. Refrigerating apparatus comprising in combination, a cabinet having a plurality of walls forming a food storage compartment therein, an evaporator of a closed primary refrigerating system disposed in said food storage compartment, said evaporator being constructed and arranged to provide a freezing chamber within the food storage compartment, said closed primary refrigerating system including a refrigerant translating portion for circulating refrigerant to and from said evaporator to cause same to produce a refrigerating effect, means removably associated with said evaporator and forming a secondary volatile refrigerant circuit, said means including a refrigerant condensing portion in direct thermal contact with a portion of said evaporator and a refrigerant evaporating portion spaced from other portions of said evaporator for cooling and causing circulation of air within said food storage compartment, insulating means closing the space between said evaporator and said secondary volatile refrigerant circuit forming means for substantially isolating said evaporator from the circulating air, and said closing means being resilient to permit deformation thereof upon moving said secondary volatile refrigerant forming means relative to said evaporator for removing same therefrom.

2,229,747. AIR DISTRIBUTING DEVICE. Franz J. Kurth, New York, N. Y., assignor to Anemostat Corp. of America, a corporation of Delaware. Application Feb. 23, 1939, Serial No. 258,080. 11 Claims. (Cl. 98—40.)

1. A device of the character described comprising a rearmost member having an opening and a neck extending rearwardly therefrom in surrounding relationship to said opening for connection with a duct, a series of open-ended, hollow flaring members in front of and spaced from said rearmost member.

PATENTS

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DISPLAY CASES
Write for details of this sensational new 100% PORCELAIN Display Case line.
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LET US SOLVE YOUR
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Add to Your Product the Reputation of
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We Manufacture Only
Food Storage Lockers
Our entire time is devoted to the manufacture, research and development of lockers. Write for particulars.
Master Refrigerated Locker Systems, Inc.
121 Main St. Sioux City, Iowa
200,000 Masterbuilt Lockers In Use

SHELL and FIN TUBE CONDENSERS
Combination of Water Cooled Condenser and Liquid Receiver
KRAMER-TRENTON CO.
TRENTON, N. J.

Dealers Wanted for Midwestern and Southern States
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BUY
ACME
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JACKSON ACME INDUSTRIES MICH.

Profit by NATION WIDE Acceptance
LARKIN REFRIGERATION PRODUCTS
Actual on-the-job-operations prove that you can get better results with LARKIN's new improved units. Patented Cross-Fin Coils. Bare Tube Coils. Humi-Temp Forced Convection Units. And other Larkin Products. See your jobber or write:
LARKIN COILS, INC.
519 Memorial Dr., S.E., Atlanta, Ga.
Originators of The Cross Fin Coil

AMANA
MAKES SENSATIONAL SALES RECORDS!
New Amana "Plug In" Case. 6 ft. and 8 ft. sizes. 5-year guaranteed compressor unit. Triple glass front. Hard rubber doors and slides. Cork board insulation. An unmatched value. Write Amana now for facts on COMPLETE line. Desirable territories available to distributors.
AMANA SOCIETY
Amana, Iowa

OVALINE HAND-WHEEL
Its exclusive oval shape provides a really natural gripping surface.
RECOMMENDED AND SOLD BY LEADING JOBBERS
HENRY
BALANCED-ACTION DIAPHRAGM PACKLESS VALVES
HENRY VALVE CO.
1001-19 N. SPAULDING AVE. CHICAGO, ILL.

AMINCO No. 881 Constant Pressure Valve
A two temperature automatic valve, with built-in check. Ideal for controlling the warmer coils in multiple systems. Shuts off tight. The two-temperature valve keeps walk-in boxes at constant temperature avoiding low pull-down. Adjustable between 20 in. vacuum and 40 lb. pressure. Maintain coil pressure within a 2 lb. differential.
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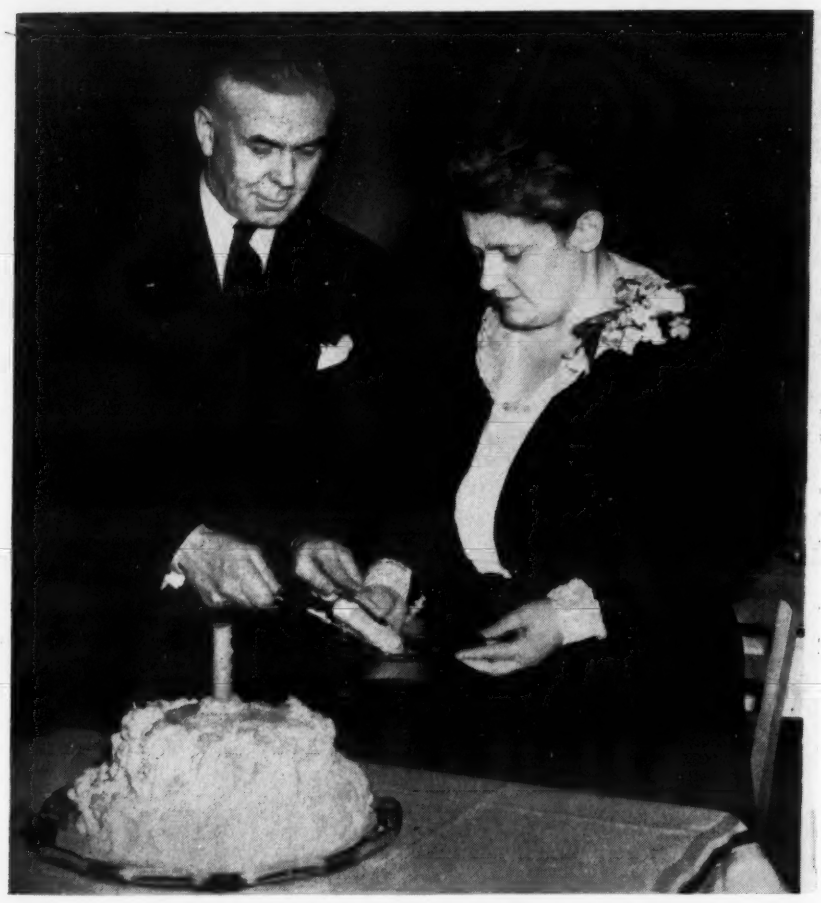
1481-1491 Fourteenth Avenue DETROIT, MICHIGAN
Pacific Coast—Van D. Clothier, 1015 E. 16th, Los Angeles, Calif.
Export: Borg-Warner International Corp., 310 S. Michigan Ave., Chicago, Ill.

DAIRY CASE
WALK IN
REACH IN
VEG-I-CASE
STREAMLINER
INCREASE YOUR INCOME WITH PERCIVAL
The complete PERCIVAL line offers models and sizes for every purpose—making it the "Dealers Choice."
Write for complete information about PERCIVAL's attractive distributors proposition. You too can increase your Sales and Income "the Percival way"—so don't delay—write today.
C. L. PERCIVAL COMPANY, BOONE, IOWA

Bridgeport Birthday Party



When the General Electric Institute at Bridgeport, where G-E's home economists give the company's new appliances a tryout, celebrated its first anniversary recently, Mary Margaret McBride, writer and radio columnist on things domestic, was guest of honor. Here H. L. Andrews, G-E vice president in charge of the appliance and merchandise department, cuts her a piece of cake.

Miss McBride, Miss Edwina Nolan, manager of the G-E home service department, and Mrs. George Israel Putnam, octogenarian representative of Connecticut's famous Putnam family, in the Institute kitchen.

Anti-Trust Violation Charged To Calif. Appliance Group

(Concluded from Page 1, Column 3)

has been carried on since July 1, 1935.

It is asserted that in enforcing the agreements a financing plan was used under which the two utility companies discounted for cooperating retailers their conditional sales contracts covering gas ranges sold on deferred payment plans.

It also was charged that an appliance shopping service was used to police the industry, and that range manufacturers selling to retailers who did not comply with the conditions of sale as dictated by the defendants were boycotted. Further, the indictment alleged that a monthly black list was used as an aid to the boycott against the retailers who failed to cooperate.

Thus this Federal indictment challenges the legality of the "fair trade" practices which the Retail Furniture Association of Southern California has applied to the sale of electric refrigerators, as well as gas ranges, in its avowed effort to put a stop to the problems of retail price instability so prevalent in the trade.

Named as defendants in the indictment returned here last week are:

Southern California Gas Co. and Southern Counties Gas Co.

Barker Bros. Corp.; Broadway Department Store, Inc.; J. W. Robinson Co.; Bullock's, Inc.; May Co.; Fifth St. Building, Inc.; Dohrman Commercial Co.; Los Angeles Furniture Co.; and C. E. Price (doing business under the name of Price Bros.).

O'Keefe & Merritt Co., Gaffers & Sattler, Western Stove Co., and James Graham Mfg. Co., all of California; Estate Stove Co., Hamilton, Ohio; American Stove Co., St. Louis, Mo.; George D. Roper Corp., Rockford, Ill.; Tappan Stove Co., Mansfield, Ohio; Cribben & Sexton, Chicago; and Leo J. Meyberg Co.

Informed of the grand jury action, Franklin S. Wade, president of the Southern California Gas and the Southern Counties Gas companies, said:

"The indictment comes as a complete surprise to us. We have not been served with papers. None of the officers of the company has been notified. Consequently, we know nothing about it. When we have had an opportunity to study the indictment, we will make a statement."

Mart Reports Sales Gain, Loss of Workmen

CHICAGO — Sales by manufacturers of major appliances and housewares represented in the Merchandise Mart increased 28% in 1940, according to the Mart's Barometer of Wholesale Buying. December sales gained 12% over November, and were 31% above December, 1939.

Loss of skilled craftsmen to defense production is increasing, it was noted, one appliance manufacturer reporting that 72 out of the 1,100 workmen quit in one week to accept defense work.

Wolverine Reports Finned Tubing Gain

(Concluded from Page 1, Column 4)

Federal taxes, the annual report asserts, increased sales volume did not produce proportionately increased profits for the year.

Federal normal and defense taxes and excess profits taxes for the year 1940 amounted to $192,416, as against $91,053 in 1939. Total Federal, state, and local taxes for 1940 amounted to $320,136, equivalent to approximately $375 per employe, based on the average number employed.

Finned tubing, used largely in air conditioning equipment, is manufactured by a patented process developed by the company. Sales of this product have greatly expanded in the past year, according to the annual report, which points out that the opening of a second plant was made necessary in 1940 by the increase in finned tube business.

Refrigerated
FLEX-LINE
BEER LINE ASSEMBLY
A New Profit-Builder!
For extra profits, sell CHIL-KWIK "Flex-Line" (patents pending) — the flexible, refrigerated beer line assembly. Dealers and distributors wanted. Write:
CHILL-QUICK CORPORATION
325 E. Chicago St., Milwaukee, Wis.
CHIL KWIK

Dallas Refrigerator Sales Way Ahead

(Concluded from Page 1, Column 1)

Dollar volume of refrigerator sales did not quite keep pace with the rise in unit volume, but nevertheless reached $151,480 this January as against $110,340 in January of last year.

Appliance	Unit Sales	Dollar Volume
Household		
Refrigerators	1,082	$151,480
Radios	2,118	74,130
Washing Machines	320	22,400
Commercial		
Refrigerators and Display Cases	19	13,625
Ice Cream and Frozen Food Cabinets	2	1,200
Water and Beverage Coolers	13	7,490

Condensing Units for every commercial refrigeration and air conditioning requirement . . . Also packaged air conditioners.
CURTIS REFRIGERATION AIR CONDITIONING and COMMERCIAL
Established 1854
Curtis Refrigerating Machine Co.
Division of Curtis Manufacturing Co.
1912 Kienlen Ave., St. Louis, Mo.

SPECIFY Virginia REFRIGERANTS

VIRGINIA SMELTING CO.
Located at tidewater
WEST NORFOLK • VIRGINIA
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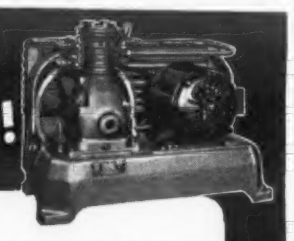
EASY TO SELL!



More than 20 years of high reputability...in every kind of refrigeration service...has established the name "Lipman" as a BUY word that breaks down sales resistance. Make this reputation your sales asset . . . for greater profit and better customer satisfaction.
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GENERAL REFRIGERATION DIVISION
Yates-American Machine Co.
Dept. AC-1 Beloit, Wisconsin

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Keeps Any Refrigeration System CLEAN
ap
DEPENDABLE
Progressive Service Engineers Use and Recommend — and Aggressive Jobbers Stock and Talk ap Products.
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Export Department 100 Varick Street, New York City